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ELECTRIC POWER

CEMA POWER GRID NOTES ANNIVERSARY

Moscow IZVESTIYA in Russian 30 Jul 82 p 5

[Article by IZVESTIYA correspondent L. Kornilov from Prague: "An Energy Power"]

[Text] For some reason the wall clock was an hour ahead of mine.

"No need to change the hands," said the leader of the operations group, the chief specialist Istvan Herzeg from Hungary, smiling. "We have our own time which knows neither daylight nor winter hours or differences in time zones...."

I was in the center of Prague, at the Central Control Administration [CCA] for the joint power systems of the seven CEMA nations. 25 July marked the 20th anniversary since the day when on behalf of the governments of Bulgaria, Hungary, the GDR, Poland, Romania, the USSR and Czechoslovakia, an agreement was signed in Moscow on the forming of this "energy power."

"At present, it is even impossible to imagine what it would cost our nations without this board, without its unsleeping controllers," said the director of the CCA, the representative of the CSSR, the Candidate of Technical Sciences Vitold Vitek, beginning the talk. "Our CCA coordinates, as the specialists say, the parallel operation of the joint power systems of the European CEMA nations with the Unified Power System of the USSR. The following figure eloquently shows the scale of coordination: it encompasses power plants with a total capacity of 140 million kilowatts! The possibilities of shifting flows of energy increased particularly with the completion of the intersystem 750-kilovolt power transmission line which connected the Ukraine and Hungary. Now a second leg is about to be built, a 750-kilovolt power transmission line from the Khmelnitskiy AES which is being built in the Ukraine to the Polish city of Rzeszow."

...What about the control board? It was not even very large. (The central control rooms of the member nations are much more impressive, commented the persons with whom I spoke.) But one is won over by the electronic graph board which shows the powerful breathing of energy in the socialist countries....

"The minus sign in front of the figure means the exporting of electric power," explained the controller on duty, the Pole Wladislaw Szarsky, "while a plus means the importing of power. At the given moment, the USSR and Poland are working 'at a minus.' The remaining nations are operating 'with a plus.' Electric power is delivered under a schedule and according to concluded contracts."

Well, what happens if there is an accident? For example, a major emergency in one of the national grids? In emergency instances the controllers from the CCA connect in reserve capacity from the united power systems. However, it must be pointed out that under ordinary circumstances the CCA does not control the power flows (as before this remains the competence of the national control services). The CCA coordinates the energy flows. That is the whole point. An energy union of equals, a union which multiplies the capacity of each member and makes it possible to find the thriftiest, most economic solution for all. There is no need to say how important this is precisely now, when the saving of energy resources has become one of the major tasks in the economic strategy for the socialist commonwealth.

Comrade Vitek recalled that last winter in Czechoslovakia there were strong, extended cold snaps and the CSSR received additional power from the "donor" aid of the fraternal nations. Certainly one good turn deserves another....

A common good, a common cause. In the small international collective of the CCA, these Russian words (and Russian is the working language here) are probably not often said. More current are other expressions such as "exchange capacity," "peak loads" and "daily schedule".... But the purpose of all the work carried out by the CCA is precisely this. The collective which is celebrating its 20th anniversary is working for the common good and for the sake of the common cause.

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ELECTRIC POWER

CONSTRUCTION PROGRESS AT ZAPOROZHYE NUCLEAR PLANT REPORTED

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 30 Jun 82 p 1

[Article by a correspondent collective from SOTSIALISTICHESKAYA INDUSTRIYA and the editors of the oblast newspaper INDUSTRIAL'NOY ZAPOROZH'YE: "The Effectiveness of the 'Worker Relay'"]

[Text] The construction of the Zaporozhye Nuclear Power Plant [AES] started in 1980 and in 1983 its first power unit should be on line. Then each year one reactor should go into service. Up to now such a pace has never been known either in Soviet or world practices for building nuclear power plants. And this has been done regardless of the large amount of building housing, socio-cultural and service facilities.

In September of 1981, the newspaper INDUSTRIAL'NOY ZAPOROZH'YE published a letter from the construction and installation workers of the Zaporozhye AES to all labor collectives involved in its building. The letter contained a challenge to make the new construction project a rapid assembly line and an experimental demonstration both in terms of pace and work quality.

During the 11th Five-Year Plan the Zaporozhye AES construction workers must carry out around 400 million rubles of construction and installation work. But not only is the pace the distinguishing feature of the new project. Quality is also high and excludes further "finishing touches" and reworking. The construction administration and the designers were concerned with this ahead of time and they created a strong industrial base including a yard for preassembled slabs for the housing construction and AES construction combines and a piping plant. At present, here there are virtually no construction workers in the traditional understanding of this word. All are installation workers. The installation of the plant is being carried out in assemblies and structural elements and this has made it possible to significantly reduce the number of workers.

The industrializing of construction has made adjustments not only in the methods but also in the organization of the work. Narrow specialization has been introduced at the construction site. For example, a concreting section has been organized and it includes the concrete plant and the transport workers. Productivity rose by 5-fold. And concrete work comprises more than one-half the volume of all the construction work. The nature of the socialist competition has also noticeably changed. Collective forms of labor rivalry have assumed ever-greater scope and these are based on contracts between the brigades operating

under a single schedule. Even the brigade contract itself, incidentally, has been enriched by the Zaporozhye AES construction workers with a new content as they have introduced a section contract.

But it has been simply impossible to achieve the planned goal without the aid of suppliers and there are around 200 of them for the construction workers of the plant. For this reason, the AES construction workers have resorted to the already-tested method of accelerating the pace and improving the quality of work, that is, a competition within a "worker relay."

"The ring inserts were sent 2 months ahead of time for the first unit of the Zaporozhye AES. The brigade of N. Silayev distinguished itself in carrying out the quota. It also dispatched the products in 6 hours instead of 8," the editors were informed by the Izhorskiy Plant. The association has set up a staff for monitoring the fulfillment of the orders from the Zaporozhye AES. It is headed by the deputy general director for production, V. Shevchenko.

"The heat exchangers will be delivered to the AES a quarter ahead of the designated date," resolved the Taganrog Krasnyy Kotel'shchik Plant. Here, in signing the contract, a new point was incorporated in a protocol. Specialists were to be exchanged and naturally this would benefit both collectives.

On 1 April 1982, at the Zaporozhye AES the first cubic meter of concrete for the foundation of the third reactor was laid during a ceremony. The planned pace of construction as a whole has been adhered to. But this does not mean that here the work is being carried out as is required at a construction project which is high-speed assembly line and an experimental demonstration both in pace and quality. As the workfront has broadened and as the volume has increased, the dependence of the construction workers upon subcontractors has grown. At times the blame has been due to the Ministry of Power Machine Building which makes its own adjustments. Thus, the date for manufacturing a support beam was shifted from the second to the fourth quarter for the Izhorskiy Plant and for the air-tight insert pipe ducts from the second to the third. Such adjustments undoubtedly do not benefit the work. The erection of the AES by the designated date is a task of state-wide importance and appropriate attention to it is required.

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CONSTRUCTION PROGRESS AT KHARANOR POWER PROJECT DESCRIBED

Moscow SEL'SKAYA ZHIZN' in Russian 16 Jul 82 p 1

[Article by SEL'SKAYA ZHIZN' correspondent M. Babintsev from Chita Oblast: "A Giant of the Transbaykal"]

[Text] The main level of the future power center of the Transbaykal probably can be set precisely here, from the steep stages which step down to the Kharanor Coal Pit. Contrary to the previous construction traditions, here a town for power workers and for those who will create all the necessary social goods will be built first. Next to the new microrayon the outline of the future thermal plant has been marked out and its first units are to be erected at the end of the 11th Five-Year Plan. The power complex will be built according to the last word of science and technology. In a talk the First Secretary of the Chita CPSU Obkom M. I. Matafonov said:

"The development of the coal mine is as important for us as is the construction of the new thermal plant. As is seen from the experience of neighbors in Buryatia, Irkutsk and Amur Oblasts, the GRES must first be provided with fuel."

The Kharanor coal series, in the opinion of geologists, is the largest dish in Eastern Siberia from which in time more fuel can be dug than even from the famous Neryungrin deposit in Yakutia.

The main thing, asserts the enterprise's director B. A. Borodin, is here there is a very cheap method of coal mining. In comparison with underground mining, labor productivity is 10-fold higher while mining costs are 8-fold lower.

At present, around 7 million tons of fuel will be dug from the quarry per year and this is 1.5-fold more than the initial designed capacity. In the near future it will approach 12 million tons of coal per year and the pit will become one of the largest in Siberia.

Its history is also amazing. At the beginning of the 18th century, prospectors searched for precious stones on Mount Sherlovaya. The black body protruding from the ground, which often smoked from spontaneous combustion, was less attractive and tended more to frighten the prospectors. Only at the end of the last century, when the Transsiberian Mainline was laid, was serious research carried out on the deposit by the mining party under the leadership of Academician V. A. Obruchev. When the Transbaykal industry developing here required

fuel, more attention was paid to Kharanor and coal mining was increased by several fold.

For labor accomplishments the largest enterprise of the oblast, the future base of its power, was awarded the Order of the Labor Red Banner. During the last five-year plan alone, some 17 times it won prize places in the all-Union competition among similar enterprises of the nation. The success was the result of constant engineering search and the great labor by scores of job experts. For example, the name of the rotary excavator operator, the winner of the Lenin Komsomol Prize, Mikhail Sobolev, is known far beyond the Transbaykal. In participating in the competition of CEMA-nation coal enterprises, he won first place. Now Mikhail heads a Komsomol-youth brigade which each month overfulfills its quota for fuel output. The brigade leader of excavator operators Nurislan Petrov and the diesel locomotive engineer Boris Kharchevnikov have become winners of the USSR State Prize.

The appearance of the mine is to change with subsequent technical reequipping. A plan for recultivating the land has been worked out. In order to reach the coal seam, tens of meters of overburden have to be removed. While previously concern was basically over how to mine the extra ton of fuel, today life requires a comprehensive approach to production and concern for the land. At present, the worked pits are being filled with barren rock. A fertile layer of soil is spread on top. It will be possible to plant trees and brush and lay out recreational areas.

"Some 15-20 years ago, there was not a single tree in the miner settlement which had been built on the barren dusty steppe," said the first secretary of the Borzya party gorkom, V. I. Shkarovskiy. "Now, just look, we have our own park with a rest area, one of the best preventoria in the oblast and during their free time the workers can participate in orchard and garden raising. Generally speaking I should point out that we are presently devoting as much money to the construction of well equipped housing and sociocultural and service facilities as we are to the development of the enterprise itself."

There is the important fact that the leaders and specialists have shown much initiative in developing the subsidiary farms, in adopting the experience of the neighboring Sherlovaya Gora mining-processing combine. They have been able to develop over 1,500 hectares of barren land and now grow grain and feed crops on it. A large pig farm has been built and a flock of sheep brought in. The enterprise has its own hothouses.

...At the foot of the Kukul'beyskiy Range, a coal combine has grown up, the most promising from the Baykal to the Amur. The day is not far off when it will supply fuel to the equally large Kharanor GRES, the junior sister of the Gusinoozerskaya. Flowing into the single energy line of Siberia, they will provide a powerful impetus for the development of new industrial enterprises.

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ELECTRIC POWER

ROLE OF VAKHSH RIVER HYDROPOWER PLANTS REVIEWED

Moscow IZVESTIYA in Russian 12 Aug 82 p 1

[Article by IZVESTIYA correspondent V. Surkov from Dushanbe: "The Lights of the Powerful Vakhsh"]

[Text] Electric power is rightly called the key sector of the national economy. Its successful development determines the further planned growth of the entire Soviet economy. The "Basic Directions for the Economic and Social Development of the USSR for 1981-1985 and for the Period Up to 1990" envisage bringing electric power output at the end of the 11th Five-Year Plan up to 1.55-1.6 trillion kilowatt hours. Hydroelectric plants [GES] will provide a significant portion of this, some 230-235 billion kilowatt hours.

In the east of our nation, in Central Asia, there are enormous reserves of hydropower. Large GES with large reservoirs are being built in these areas. Today our story is about the tapping of the energy potential of one of the main water arteries of Central Asia, the Vakhsh River. Here an entire series of GES has been erected by the unstinting labor of the Soviet people.

Opening up in front of one's view are unique panoramas of rocky heights rising into the skies. The wheels of motor vehicles raise thick clouds of dust. Roaring flows of crystal-clear water pour from the dizzying heights.

A bright sun hangs over all this amazing, almost lunar landscape. In its rays are the infinite chains of giant mountains and the snow white fields of 3,000 Pamir glaciers. Near to them flower the yellow Tajik edelweiss and geysers erupt from the rocky soil. Here, close to the highest points of our motherland, rise the great rivers of Central Asia.

At the Taumuruk Pass, at an altitude of more than 4.5 km, in small cold streams begins the main water artery of Tajikistan, the Vakhsh River. From its clouded glacial source of Kyzyl-Su to the confluence with the Pyandzh, the Vakhsh drops 4 km into a valley. It is a waterfall river!

In the summer, when the torrid sun melts the glaciers of the Roof of the World, the Vakhsh roars fully through the narrows of the gorges with avalanches of gravel and in picking up speed, carries more than 4,000 m^3 of water per second down its rocky channel! Then it could be called a flying river.

From now on the Vakhsh is to be controlled by man. Its energy has been included in our grandiose plans for carrying out the Food Program.

Research has shown that in terms of potential hydropower resources--almost 300 billion kilowatt hours--Tajikistan holds second place in the USSR, only behind the RSFSR. But in terms of the saturation with these priceless resources per unit of area, Tajikistan holds first place. One-quarter of all the hydropower potential of Tajikistan is made up from the Vakhsh series of GES consisting of eight stages. The possibility of erecting it arose after the Great Patriotic War. The start of construction was the Perepadnaya GES on the main channel and this was commenced in the 1930's. It went on-stream in November 1958. Its capacity was small, some 30,000 kilowatts. But less than 5 years, the Golovnaya GES arose and it surpassed the capacity of the Perepadnaya by 7-fold. It is worthy of note that the second station of the series rose like a magnificent electric palace directly in the channel of the rushing Vakhsh. A year later, in 1964, the Tsentral'naya GES began operating.

From the valley banks the construction workers, enriched with experience, moved up the Vakhsh joining forces with those who in the narrows of the Pulisangin Gorge were already building the fourth station of the series, the Nurek.

In 1972, a year ahead of the planned date, two power units of 300,000 kilowatts each were put into operation. The hydropower installation under construction began delivering the Central Asian republics both electric power and water for the development of industry and for making the desert suitable for growing cotton and food crops.

In 1979, some 15 months ahead of schedule, the Nurek GES reached full power of 2.7 million kilowatts. Many engineering and technical problems were solved here for the first time in world practice. The world's highest dam was erected in a zone of 10-point seismic activity! At this hydropower plant, the first Soviet water-cooled 300,000-kilowatt hydrogenerator demonstrated excellent operating qualities. A man-made sea was created with 10.5 billion m^3 of water. Some 35 km of tunnels had been drilled through the mountains. A new socialist town had arisen, Nurek.

At the construction project in Nurek, a new form of the all-Union competition arose. This was the "worker relay" which has become a veritable key for accelerating the pace of construction as well as a dependable guarantee for quality and efficiency. Comrade L. I. Brezhnev in his greetings to the Nurek hydropower construction workers wrote: "It is quite natural that the 'Worker Relay' which developed at your construction project has been taken up by many labor collectives.

"It is a pleasure to note that the Nurek GES, along with generating cheap electric power, has made it possible to generously irrigate the cotton fields of three fraternal republics and almost completely return the money spent on

building it to the national economy. This is a good example of the comprehensive use of natural resources and of increasing capital investment effectiveness."

Above Nurek on the Vakhsh construction has started on the Rogun GES, the fifth and highest plant of the series. Here the people are erecting a dam in a rocky canon that is higher than the Nurek one. The capacity of the GES will be 3.6 million kilowatts. And below Nurek, construction and installation work is in full swing on the sixth GES of the series, the Baypazin.

With the aid of the "Worker Relay," it is being erected ahead of schedule. Here there is no directorate for the GES under construction. For the first time in the USSR the construction and installation workers themselves during the current five-year plan will complete the plant as a turnkey project, reach full capacity and then put the plant into permanent operation.

The designers are plotting the seventh and eighth stations of the series, the Sangtudin and Shurob, on the drafting paper. But even now it is possible to estimate what the still-incompletely transformed Vakhsh has given the motherland. This is 80 billion kilowatt hours of electric power with 50 coming from the Nurek. The cost of the Vakhsh power is the cheapest in the nation, some 0.08 kopeck per kilowatt hour.

From the Nurek Sea, over billion m^3 of water have been sent into Turkmenia and Uzbekistan where the deserts are being turned into new areas of irrigated farming. This is the 10th year where they have grown good crops of cotton, vegetables, fruits, melons and watermelons. Each year the newly irrigated lands bring the virginland farms at least 200 million rubles of income.

In particular, here is how the water and electric energy of the Vakhsh has been used in the Karsha Steppe of Uzbekistan. Seemingly just yesterday here all was a cheerless desert. But now the cotton plantations are emerald green in the sun. Fruits are ripening in the orchards. Equipment is everywhere.

"We lift the irrigation water from the Nurek Reservoir onto the fields using the electric pumping stations also driven by energy from the Vakhsh," I was told with satisfaction by Makhmud Khudaykulov, secretary of the Kashkadarya party obkom.

When the Nurek GES reached full capacity, electric power production rose 3-fold in Tajikistan. Now in 2 incomplete days it generates more power than all of 1940. The Nurek power drives major capacity at the Tajik Aluminum Plant and the Yavan Electrochemical Plant. During the 10th Five-Year Plan alone, more than 55,000 hectares of new irrigated land were put into agricultural use in Tajikistan. Large livestock complexes were built for raising and fattening cattle. A large amount of work was done to build housing, educational and scientific institutions as well as cultural, public health, utility and consumer services for the public. All of this has come from the Vakhsh, the energy heart of the Southern Tajik Complex and the flagship of hydropower in Central Asia.

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KAZAKH SCIENTISTS WORK TO IMPROVE OIL, GAS RECOVERY

Alma-Ata KAZAKHSTANSKAYA PRAVDA in Russian 23 Jul 82 p 4

[Article by A. Gurkin: "For the Country's Oilfield Workers"]

[Excerpts] Workers of the Department of Dry Plugging Mixes and Clay Powders of Aktyubneftegazgeologiya [Aktyubinsk Oil and Gas Geological Operations Association] dispatched a regular batch of output the other day to Tataria's oilfield workers. The new material has almost double the thermal stability of previously used mixes for making expensive plugging cement. The mixes are prepared from...waste that lies in the dumps of the local ferroalloys plant and ordinary sand. For each ton of this material, about 30 percent of the funds that would be used to produce traditional mixes are saved.

The advantage is that it is available.

Our scientists say that the search for new materials during the past decade has been determined by tw an tasks. The first is to provide for high effectiveness and economy in prospecting and exploring for oil and gas in West Kazakhstan. And the second is to protect the environment by bringing various types of industrial waste into production. It must be said that much work has been done. In the past year alone more than 20 patents for plugging mixes and instruments and devices for manufacturing them have been defended. The new materials that we developed in 1980 have been awarded gold, silver and fourth-place bronze medals at the Exhibition of Achievements of the National Economy, and they are enjoying great demand not only in Kazakhstan but also in the oilfields of Tyumen, Tataria and Bashkiria.

Instruments created in our laboratories have won wide recognition. For example, an instrument for determining changes in volume is being used in all the leading oil-bearing regions of the country. I would especially like to emphasize that savings from the industrial use of the plugging mixes that we have created, basically through the utilization of wastes, come to hundreds of thousands of rubles annually.

Let us illustrate what the scientists have said by a concrete example. Right now, for the republic's oilfield workers and the explorers for oil, and, what is more, for a number of other regions of the country, protection of the wells against the effects of hydrogen sulfide, which rapidly destroys both the hardened plugging cement and the metal casing strings, has become problem No. 1. The wells--and each of them costs millions of rubles--are subjected to serious deterioration and go out of order. Scientists of the Aktyubinsk Division of KazNIGRI [Kazakh SSR Scientific

Research Institute for Geological Exploration] managed to solve this problem in a short time. Using the experience gained, they created a hydrogen-sulfide resistant cement based upon several types of industrial-production waste and cement, which exceeds severalfold the strength characteristics of the former cement. Several patents have been recorded for the new material.

The active search for new ways to use industrial waste and to improve the materials already created continues. It is especially important that the collective of the KazNIIGRI division not limit itself just to developing scientific and technical recommendations but also exert maximum effort to introduce what is new into wide use. Thus the disintegrator technology for preparing the very plugging cements that were developed by the scientists helped the emergence of the department at which we began the discussion.

The Aktyubinskers are making a successful search also in many other areas. In particular, the scientists have discovered features of the geological structure of the subsalt of the Caspian Depression's Paleozoic and have made concrete recommendations for the discovery of new oil and gas fields. The scientific bases for forecasting anomalously high formation pressure were developed, and also a device for detecting it. Major scientific work has been done by the division on well completion and testing and the creation of special drilling muds. In accordance with the research results, about 30 recommendations, including recommendations on the construction of wells at the Zhanazol, Kenkiyak and Karachaganak fields, have been made in recent years to the production organizations.

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ERECTION OF CHARDZHOU OIL REFINERY IS PROCEEDING SLOWLY

Ashkhabad TURKMENSKAYA ISKRA in Russian 23 Jul 82 p 2

[Article by M. Bektasov: "Not Together, but Separately"]

[Text] There weren't any of them until recently. The 32-meter high metal columns at the site of the Chardzhou Oil Refinery are now visible from a distance. The brigade of scaffolder I. Kostyukevich from Novo-Polotsk and the erectors of the Chardzhou administration of Neftezavodmontazh [Oil Refinery Erection Trust] needed only a few days to raise the complicated structures on the footings.

The construction project at Neftezavodsk is gathering speed. The general contracting trust [Turkmenvostokneftestroy [East Turkmenistan Trust for the Construction of Oil Industry Enterprises] was recognized as winner in the socialist competition among TuSSR Ministry of Construction subunits for the first-quarter results.

"Certain improvements in supply and equipment provisioning, in organizing the people's work and in the introduction of new equipment," says D. Khidyrov, trust chief engineer, "helped here. Collaboration with scientists helped us to use new types of footings with intermediate stiffness which reduced expenditures of time and materials in laying them."

And so the construction project at Neftezavodsk is entering an important period. In 2 years the Chardzhou Oil Refinery should yield its first planned output. The Basic Directions for Developing the USSR's National Economy require it. All participants in erection of the facility face the task of speeding up to the maximum the erection of installations for primary oil refining and for catalytic reforming with a view to putting them into operation by the required deadlines.

The task is not simple. The fact is that, with a budget-estimated cost of 117.7 million rubles for construction and installing operations, about 71 million rubles have been assimilated in 11½ years. Thus, in the short time interval left, more than 40 million rubles remain to be assimilated. It is clear that despite a turn for the better, the current work pace at the site still is not adequate.

There are no few risks in the plant's fate and introduction of the enterprise. Until now the client--USSR Minneftekhimprom [Ministry of Petroleum Refining and Petrochemistry]--and its board at Neftezavodsk have not financed the facility in conformity with the startup deadlines. For the current year, for example, more than 7 million rubles have been allotted. And prospects for the future are not

very favorable. Here is one of the circumstances that pose the threat of failure to meet the intended deadline for introduction.

The lag in arrival of the operating design and budget-estimating documentation for the complex that is due for early startup and for the TETs is worrisome--it prevents the formulation of stable supply plans for 1983 and rhythmic work by the builders. It would seem that the director of the plant that is under construction, A. K. Astashev, should solve these urgent questions as quickly as possible.

And the obvious slowdown of work at the site also puts one on the alert. The general contractor did not maintain his position in the second quarter and failed the task for the first half of the year, having carried it out by 94 percent. Time losses, which are explained by deficiencies in organizing production, a shortage of materials and incompleteness of prefabricated reinforced concrete, were not eliminated.

As you see, it is rather early to relax here. TuSSR Minstroy [Ministry of Construction] and its Turkmenstroykomplekt [Turkmen SSR Administration for Outfitting Construction Projects] and Turkmenstroyindustriya [Turkmen SSR Trust for the Construction Industry] are obligated to pay more attention to this construction project of the five-year plan. The builders are proceeding slowly at industrial facilities of the ELOU-AVT [electrical atmospheric-vacuum pipestill desalination installation] itself. For this reason, the schedules for installation of imported equipment have been moved back. More than 18 million rubles' worth of it has piled up at the client's warehouses.

The difficulties are compounded by a lack of coordination in the activity of other contracting organizations at the site. For example, erection of the TETs, without which operation of the future plant is impossible, is being conducted extremely unsatisfactorily. The press has several times reported that Turkmenenergostroy [Turkmen SSR Trust for the Construction of Power-Engineering Facilities] of USSR Minenergo [Ministry of Power and Electrification] is not taking steps to strengthen its collective with workers and engineers and with equipment and materials.

The collective of builders of electric-power facilities at Neftezavodsk is especially weak. Instead of the required 430 people, 50(!) are present. Should one be surprised by the fact that they meet the plan by only about 13 percent? Meanwhile, trust manager Comrade Bulavko is unconcerned. Also passive is V. Dubinin, chief of the SU [Construction Administration] of ChardzhouTETsstroy [Trust for Construction of the Chardzhou TETs].

The construction of railroad facilities is moving ahead slowly. Sredaztransstroy [Central Asia Transport Construction Trust] did not carry out the program for the first half of the year. During the winter months it retained one-third fewer people than it should have. Today brigade manning has increased but what has been neglected has not been made up. It is a pity that the "internal" subcontractors also are letting themselves down. Thus, a work front for underground utilities and services lines had been prepared long ago for SU-2 of Turkmenspetsstroy [Turkmen SSR Trust for Installation and Special Construction Work] of the TuSSR Ministry of Construction. But the equipment operators were in no hurry and hampered interdependent activities greatly.

In brief, in many sections of the oil refinery's construction operations, there is a lack of coordination, and in many elements annoying interruptions are observed. But indeed there is someone to coordinate the efforts of the interdependent agencies at the site. An oblast Commission for Supervision of the Most Important Construction Projects has been created at Chardzhou and is in operation. However, for 5 months, since the start of the year, the commission, whose chairman is the secretary of the Chardzhou Oblast Party Committee, N. G. Sapozhkov, did not once at its meetings review the exciting problems of the facility or discuss the results and style of activity of the contruction participants, and it has not exerted concrete practical assistance and does not inquire strictly about the slow work pace.

Meanwhile, there are opportunities for assistance. If the pace of housing construction in the settlement is speeded up, it is possible to partially solve the personnel problem. Improving the supplying of materials and equipment would help in the effective operation of the production base of Turkmenvostokneftestroy, which has now been transferred to Turkmenstroyindustriya. Its capacity is being used 18-20 percent. It is no secret that not by far are all reserves being used at the TuSSSR Minstroy industrial enterprises. In the last 5 years the output of constructional structure for production facilities has been reduced from 215,000 cubic meters to 190,000 cubic meters.

An important construction project--the Chardzhou Oil Refinery--needs attention.

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TURKMEN GAS PRODUCTION HISTORY, CURRENT STATE REVIEWED

Ashkhabad TURKMENSKAYA ISKRA in Russian 29 Jul 82 p 2

[Article by S. Badalov, deputy head of the all-union industrial association "Turkmengazprom": "Inspired by Friendship"]

[Text] Gas of Karakumy to the center of the country.
Rise in the volume of exploratory drilling.
The deep well as the creative laboratory of scientists.
Plus 15 million rubles from the introduction of new equipment and technology.

The Soviet people are preparing for a worthy meeting of the remarkable date, the 60th anniversary of formation of the USSR. During these years there has been a radical transformation of the economic and social structure of the people's life. Impressive changes have occurred in Turkmenistan. The decree on the 60th anniversary of formation of the USSR stresses: "We have the right to be proud that the peoples of the former national outskirts, previously doomed to age-old backwardness, in the overall structure with the workers of all nations in the country confidently stepped into the socialist future, by-passing capitalism, and have reached the heights of social progress."

It was not easy for the Turkmen people to achieve all of this, and in particular, the heights of technical progress since they began their journey without exaggeration from nothing. Years have passed. A multiple-sector developed industry and construction industry have been set up in the republic. Great changes have taken place in the social and cultural life of the people.

The youngest sector of the national economy, gas extraction, has recently developed especially intensively. In 1980 tens of billions of cubic meters of blue fuel were extracted from the depths in Turkmenistan. This was 4.2 percent of the total volume of world extraction and 16 percent of the national. This is more than countries like Great Britain, France and the FRG together extract in a year. The gas industry now produces over 11 percent of the total annual gross product in the republic.

In order to reach this high frontier, the gas extractors had to discover and develop more new fields and penetrate deeper into the depths. Whereas, for

example, in the 9th Five-Year Plan 830,000 m of rock were drilled, in the 10th, 28.5 percent more was drilled. In this case the volume of exploratory drilling rose 1.7-fold, from 252,000 m to 430,000. The work of the tunnelers fo the dearth's levels was not in vain. Whereas in the 9th Five-Year Plan 186 billion m^3 of gas were gained, in the last five-year plan, over 300 billion. New gas fields were discovered.

The advances are even more impressive if we consider that drilling of prospecting-exploratory wells is done under severe climate conditions, with the lack of a network of roads, on areas which have not been developed, with geological sections that have not been extensively studied. The matter is complicated even more by the fact that with an increase in the depths of the wells there is a rise in the face temperatures and the bed pressure. The rocks are not stable. The drillers have to overcome different complications caused by the appearance of natural brine, gas, water, fluidity of salts, hydrogen sulfide aggression, etc. Thick salt deposits develop on their path and they considerably delay the drilling rates.

The resolution of these important tasks became possible because of the close cooperation with the scientific research institutes of the republic and the country. The Turkmen gas extractors have been helped by the scientists from the Stavropol institute "SevKavNIIgaz," the Tashkent "SredazNIIgaz," and "IGRNIGM", "VolgogradNIPIneft'" and the Krasnodar institute "VNIIKrneft'" and others.

The tie between science and production is becoming stronger. Today every superdeep well, and their number is steadily rising, is truly a creative laboratory. Here the scientists test their technical developments and realize new engineering solutions. In turn, the drillers master the modern methods of drilling wells and become familiar with the technical innovations.

For example, when drilling wells on the areas of East Turkmeniya, serious complications developed which were induced by the low efficiency of the drilling fluids. The employed reagents under conditions of high temperatures and mineralization were not capable of stabilizing the process. The scientific associates of the Moscow institute came to the rescue. They developed a formula for a fluid which has high thermal stability under conditions of polymineral aggression. Aniline and sulfur were used as the inhibitors. As a result there was a rise in the rates of drilling and a reduction in the production costs.

One can present numerous examples which indicate the unselfishness of the Soviet people and the strong international friendship and mutual assistance. Practically all the new equipment used in the fields is the fruit of the creative activity of the workers from the planning, scientific research institutes of the country. The gas extractors are efficiently using the rock-crushing tools, high-strength pipes and flushing systems. In the last three five-year plans alone, over R 15 million have been conserved because of the introduction of new equipment and the leading technology.

The fulfillment of large volumes of drilling operations is unthinkable without good material and technical support. The Turkmen gas extractors have paid attention to this. Practically all the union republics send us material and technical resources. For example, the drilling units "Uralmash" come from Sverdlovsk. Bits, pipes, different structural parts and chemical reagents come from many republics and cities in the country.

In turn, Turkmenistan is making its contribution to the development and strengthening of the country's economy. The collective of the all-union industrial association "Turkmengazprom," for example, is daily sending to the main gas pipeline Central Asia-center of the country over 160 million m^3 of blue fuel. This is natural, for by increasing the contribution to the material and spiritual wealth of the country, each republic at the same time expands the potentialities for its own blossoming and further progress. From here follows the interest of the people in strengthening cooperation and mutual assistance.

The gas of Turkmenistan is also people's fate. People have come here from all corners of the country to build up the fields, and have stayed here forever. They are not afraid of the harsh natural conditions. Hundreds of people of 50 nationalities have put down their roots here. The collective of "Turkmengazprom" today numbers about 14,000 people, of them over half are engaged in drilling.

The name of the drilling foreman, deputy of the TuSSR Supreme Soviet, Hero of Socialist Labor Pavel Yakovlevich Sheblykin is famous not only in Turkmeniya, but beyond its limits as well. He has given over 30 years to the difficult work of a driller. He has many glorious deeds to his credit. He has familiarized many people with his profession. The drilling foreman, Hero of Socialist Labor Yulian Nikolayevich Leont'yev is indefatigable in his creative search. All of his work life has been associated with the oil and gas industry of Turkmenistan. His brigade was one of the first to go to the new uninhabited prospecting areas with complicated geological sections. But, because of the high professional skill and enthusiasm of the leader, the collective took up a firm place on the right flank of the competitors and constantly increase their account of above-plan drilling.

The gas extractors give the deserved gift of praise to the drilling foremen A. Ovanyan, V. Linichenko, V. Tsitel'skiy, A. Gel'debrant, A. Uzdenov, Z. Tsogoyev and many others who help with their labor and knowledge the Turkmen people to transform their kray.

The workers of the all-union industrial association "Turkmengazprom," like all the Soviet people, are successfully implementing the decisions of the 26th CPSU Congress, the May (1982) Plenum of the CPSU Central Committee. In the Eleventh Five-Year Plan, it remains to drill 1.3 million m of rock and finish construction of 260 highly sealed operating wells. It is planned to develop 10 new fields. A considerable part of the gas will be extracted from the storehouses in the West Dauletabad fields.

Further prospecting and exploration for gas in the regions of East Turkmenistan is associated with considerable difficulties caused by complicated mining-

geological conditions of digging wells. About 90 percent of the gas arteries will be laid on the subsaline deposits whose depth exceeds 4,000 m. But we hope to successfully solve the tasks set before us and to overcome all the difficulties. A pledge of this is the strong friendship of the peoples of the country of the Soviets, specialization and cooperation of production.

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COMPLAINTS MADE IN GOBUSTAN REGARDING OIL FIELD EQUIPMENT, INFRASTRUCTURE

Baku VYSHKA in Russian 14 Jul 82 p 2

[Article by S. Mamedov, driller, S. Samedov, electrician of the Gobustan Drilling Administration, V. Gol'tsev, VYSHKA from the Rabkorovskiy post of VYSHKA: "Why Did the Drillers Give up Their Positions?]

[Text] The lengthy searches of the oil and gas formations on the area of Zardob last year were successful as is common knowledge. The exploratory wells (fourth and seventh) drilled here by the Gobustan Drilling Administration yielded industrial oil. Soon new drilling derricks rose one after another on the edges of the cotton field. Four brigades are now laying shafts to the "black gold" warehouses in this region. What is the situation in the distant exploration today?

In the opinion of the head of the second regional engineering-technological service of the administration, Alesker Babayev, the tunnelers of the depths as a whole are working well. But this estimate unfortunately does not correspond to the true situation. The drilling plan for the section for 6 months of this year has been fulfilled by 82 percent. Almost 1,000 m have not been drilled.

Of the four drilling brigades, only two are essentially working stably, without interruptions. One of them is headed by the foremen Sabir Musayev and Fariz Mamedov who are leading the drilling of well No 6 with rated depth of 4,800 m.

"Recently," relates the foreman Mamedov, "the brigade covered the very capricious Maykop-Sarmatian deposits with a casing string 299 mm in diameter. But this work cost us a lot of outlays of time and resources. The fact is that because of the low quality of the threaded connections, we usually lower the string in two sections. But in this case it is very difficult to guarantee the hermetic sealing of the butt-joints. We therefore have to fill this twice with cement."

The same is done at other boreholes. The presence of a gap between the two sections, especially under conditions of anomalously high bed pressures can be the cause of serious complications in the work. The question of poor quality fabrication of the threaded connections of the casings with diameter of 299 and 324 mm supplied to the drillers by the Dnepropetrovsk

about has been discussed many times in the association "Azneft'." But, as they say, the ball is now in their court. Recently, for example, a large batch of these pipes came to the Gobustan pipe-tool base. It was found that 80 out of every 100 pipes had a plant defect.

The discoverers of the field, the brigade of the foremen Sayad Mamedov and Aziz Ali are working below their potentialities. The assignment of 9 months of the year has been overfulfilled by the tunnelers, but in the beginning of June an accident occurred at borehole No 8. While drilling out the "cement sleeve" at a depth over 3,000 m, the weighted drilling pipes broke. The attempt to raise them from the face was a failure.

Neither Sayad Mamedov nor the engineering-technical workers of service talk about the accident, much less mention the guilty parties, since the reason supposedly is not yet clear. No matter what happened, the responsibility for the breaking of the "heavy bottom" of the drilling tool falls on the brigade and the entire collective of the regional engineering-technical service where engineering monitoring of the labor and technological discipline has recently been drastically weakened.

From here follows the violations in the rules for technology on the part of the the contractors. Take, for example, the brigade of foremen Nasretdin Bayramov and Abdulaza Samedov. Back in November of last year, at borehole No 9 a serious accident occurred because of driller Bakhman Gadzhiyev. The collapsing rock jammed the drilling tool at a depth of 3,275 m. The second shaft had to be cut. Until now the brigade has not produced a single meter of drilling for the plan since it has still not reached the previous face ofthe the well.

It should be said that the lack of a laboratory for argillaceous fluid for exploration has a great effect on the quality of drilling. It is true that here there is now an engineer for fluids and a laboratory worker, but it is simply impossible to monitor all parameters under borehole conditions.

As of yet the problem has not yet been resolved in Zardob of servicing the workers. In the settlement where the drillers live there is a small cafeteria. But it is supplied with the main types of food, sausage, meat, canned fish, and butter on an irregular basis. Thus on 10 June in the cafeteria there was nothing except bread, sheep's milk cheese and cucumbers. Having been sent on that day several dozen kilometers to the settlement of Mamedli, the barman Rizvan Mamedov returned with nothing. The drillers can not count on the cafeteria. Therefore they bring food from home. But it is not easy to store it for 6 days.

"Yes, the complaints of the workers about the cafeteria," says the geologist of the section, the secretary of the first party organization Musalim Gadzhiyev," are quite correct. The workers of the Imishli ors [department of worker's supply] are responsible for this. They primarily supply food to the cafeteria of the oil workers of 'Muradkhanlyneft'' in the Mamedli settlement, and act there at their discretion. This situation cannot be considered normal. Order can be instilled if the supply of our cafeteria was switched directly into the hands of the Karadag ors or its subordinate cafeteria."

The daily conditions of the drillers leave something to be desired. It is crowded in the camp trailers and there are no cupboards for clothes or night-tables. Not all the refrigerators work. The room where the television is is not very much like a reading room. There is a hot plate at its entrance, and in the far corner metal bed grates have been dumped. All the walls have been covered with posters about work safety.

"In the new settlement," says A. Babayev, "all the conveniences will be created. By the way, any day now we hope to move there."

In fact, next to Kura four precast houses have already been erected and a cafeteria with a water container. But it is impossible to say that everything is ready for the move. For example, there is no radio communication here, no water line has been brought in and the approach road is in poor condition.

But the main misfortune is in other areas. The settlement is surrounded on three sides by a high dam. As soon as the client the oil and gas extracting administration "Muradkhanlyneft'" chose this place, then it was necessary to stipulate and oblige the builders to do all the necessary work here so that the settlement would not be threatened with burial by flood waters or torrential rains. But this was not done. As a result the torrential rains buried the settlement. For several days the units sent here were pumping out water. The poorly built up territory already looks especially melancholy and abandoned.

All efforts of the tunnelers must now be aimed at more rapid exploration and placement of the new storehouses of natural fuel at the service of the five-year plan. It is extremely important to eliminate everything that interferes with the people's work for the distant exploration with complete giving of their efforts and capabilities.

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PROBLEMS AT BAKHAR OFFSHORE WELL EXAMINED AGAIN

Baku VYSHKA in Russian 8 Jul 82 p 2

[Article by O. Nechipurenko: "Future of Bakhar"]

[Text] 1. At the Crater of the Underwater Volcano

The chain of offshore bases on the bank of Makarov which is now called Bakhar extends like a flock of cranes. It is unexpectedly interrupted and the even smooth water several kilometers wide separates us from the single borehole far ahead, like the leader of the flock.

"Here on the 'empty' place there is the crater of an underwater volcano," says the secretary of the party organization of MURB "Bukhta Il'icha," geologist O. Suleymanov. "We laid No 82 on its opposite side, where deep wells had never been drilled before."

We add that the wells drilled on the other two sides of the underwater crater, did not reach the planned depth because of accidents and complications. They did not reveal the Kalinksiy and Podkirmakinskiy series. Despite the fact that the Bakhar field has been operated for already the second decade, the most promising Podkirmakinskiy series is still a riddle for the geologists. Some wells, for example, No 56 whose successful drilling was reported in the spring of 1977 in VYSHKA in the article "The Depths Surrender to the Skilful" by the drilling foreman A. Kaloshin yielded a powerful gusher of oil. Others were developed with difficulty, whereupon in the majority of cases with a very low output. The scientific laboratories are now disputing the reasons for this phenomenon, and are advancing different hypotheses. The drillers having overcome the perfidy of the depths, are successfully storming the 5-6-kilometer depths.

We were affably greeted at No 82 by the drilling foreman Anatoliy Samotayev who after finishing the Azerbaijan Scientific Research Institute of Petrochemistry started his labor path here at Bakhar as the assistant driller.

The path of the collective of No 82 to the current 4-kilometer depth was not easy. The powerful water and gas manifestation which unexpectedly developed soon after the lowering of the first casing string initially nullified all the efforts of the drillers making the well ahead of schedule. Months of persistent work were required in order to eliminate

the complication and to redrill the "lost" shaft and successfully lower into the well a liner string to the current depth.

"The lowering of the string was as smooth as glass," says A. Samotayev, "the well shaft was excellent, and we worked it well with expanders."

At the last technical meeting in the MURB "Bukhta Il'icha" this collective, headed by the head of the borehole B. Safarov, was named one of the best and this was no accident. They produce the most technical innovations, efficiency expert's suggestions, and simply good ideas. Recently, for example, in order to prevent coagulation of the solution in the well, it was decided to change the acidity of the oil added to it. After a number of experiments, it was finally treated with soda and the desired effect was obtained. After guaranteeing high quality of the well shaft, the standard drilling rate was doubled, from 5 to 10 m.

The well should reach the planned depth, 5,700 m, in January of next year. But the leading collective has been obliged to reach this earlier, by the 60th anniversary of the formation of the USSR.

The work is going well at the other exploratory well which is being drilled, No 83. The purpose of its tunneling is the same as No 82, to reveal the hitherto undetected deposits of the Kalinskiy series at depth of 5,800 m. The brigade, headed by the head of the borehole U. Novruzov, and foremen P. Averov and B. Agayev, ahead of schedule, in 6 months, fulfilled the assignment of the first year of the five-year plan. It is true that this year the work has somewhat slowed down here. A lot of time was lost on the lowering of the intermediate string, wellhead equipment and so on. But now the majority of difficulties are already behind, and the collective of the brigade is full of decisiveness to make up for lost time.

What Bothers the Drillers

It should be noted that as compared to the last-year's surprise inspection which we made at the boreholes of the Bakhar field, many good changes have been made. There has been an improvement in the equipping of the drilling brigades with the necessary tools and equipment, their daily living conditions, and the system of collective food supply. But the new facts that we encountered at the same boreholes that we visited made us prick up our ears. The chief of them is the lack of the necessary number of workers and the lack of competency of the drilling watches.

At No 82, for example, instead of 4 motor mechanics there was only 1, Valeriy Mironov. Although he was a Jack of all trades and a tireless worker, he of course was not able to work round-the-clock and service for 5 days the diesel motors whose power would be enough to supply electricity to a small city. Even three assistant drillers was not enough, so that foreman A. Samotayev was forced, in addition to his direct duties, to also perform the duties fo the "topside" worker during lifting and lowering of the tool into the well.

By the way, at No 130, in the brigade headed by the head of the borehole I. Movsumov and foremen V. Mamdeov and G. Iasayev, in each watch there was a shortage of 3 people and their was no mechanic for equipment repair. In addition, since the drilling here is done with the help of pipes 114 mm in diameter which are easily bent under natural weight, an additional "upper" worker is needed in each watch according to the instructions.

"We recently raised this question in MURB," says the head of the borehole I. Movsumov, "but it has not yet obtained a solution."

"As for the mechanics," someone from the workers added, "we went to the department of personnel of the administration, and they told us that their staff had been completely filled."

This announcement surprised us, for MURB asserted that on the whole for the administration there is a shortage of workers which for different reasons transfer to other drilling organizations. And what was our surprise when later, after becoming acquainted with the staff schedule, we found out that here there are 6 extra drillers, 41 assistant drillers and 12 mechanics.

Then another explanation was found:

"The fact is that many workers are now sick," says the head of MURB A. Gasymov. "This is what happens when with an above-plan number, we are experiencing a shortage of workers of the basic professions at the boreholes."

Apparently, understanding that it was difficult for us to verify this explanation, the chairman of thedrilling committee Sh. Abushov added that the trade union organization periodically makes checks during which it is often established that the worker who has a disability paper in fact is working on his farm section. But as we see, these checks have not yet changed the situation.

We encountered another problem at the 130th which is holding back the rates of drilling not only at Bakhar, but also at other areas of the Baku and Apsheron archipelagoes: shortage of turbodrills of the necessary type-sizes, their low quality repair done at the pipe-tool base of "Kaspburneftegazprom."

The foreman V. Mamedov showed us the bits elevated from the well for drilling by rotor whose cutters were very worn.

"We only drilled 4 meters with it," he says.

Nearby there was a new diamond bit, but it was impossible to lower it into the well since there was no turbodrill of the necessary type.

In a word, it is very difficult for the collective of the 130th which in the beginning of the year decided to complete the annual assignment by the 65th anniversary of the Great October if the formed situation does not change.

The members of the drilling brigade which is drilling well No 83 has made many reproaches against the administration and drilling committee.

It is characteristic that they are mainly concerned with questions which are comparatively easy to correct: provision of the borehole brigade with gloves, soap, refrigerator and timely repair of the general and production rooms.

In summarizing what has been said, we note that this is not the first time we have discussed the many problems associated with the successful drilling of wells on the Bakhar and other offshore fields of the republic.

At the same time, the solution to some of them is being delayed. The administration, party and trade union organizations and the entire MURB collective needs to do everything possible to overcome more rapidly the shortcomings in work, and at the same time, multiply their contribution to the successful exploration of new oil and gas fields in the Caspian.

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PROS AND CONS OF SEARCH FOR MESOZOIC OIL IN AZERBAIJAN AIRED

Baku VYSHKA in Russian 17 Jul 82 p 2

[Article by A. Guseynov, chief geologist of the association "Azneft'," Sh. Kocharli, chief geologist of the trust "Azneftegeofizika," and A. Akhmedov, deputy head of the geological section of the association "Azneft'": "Conduct Exploration in Stages, at a High Scientific Level"]

[Text] Before answering the main question of the discussion raised by the newspaper VYSHKA, we would like to recall where and what types of collectives have sought for the Mesozoic oil.

The sources of the search started in the 1930's when according to the data of geological surveying, on the southeast submersion of the Great Caucasus, terrigenous collectors were isolated as objects of exploration. These were the Kyulyulinskiy sandstones of the lower Cretaceous. However, exploration conducted on them in the near-Caspian-Kubinskiy and Gobustan Oblasts were not satisfactory.

Then, when thick accumulations of oil and gas were found in the North Caucasus in the carbonate Cretaceous, this collector was acknowledged as the main object of exploration in the near-Caspian-Kubinskiy, Apsheron, Gobustan and Kirovobad Oblasts, but the exploration did not lead to discoveries.

Later, with the discovery of the Muradkhanliny field, the effusive and carbonate formations of the Srednekurinskiy basin became the main object of exploration. Individual researchers have recently advanced the hypothetical Mesozoic bodies of reef origin as the objects of exploration. It should be noted that among the detected Mesozoic fields the Muradkhanliny , as well as the Zardob discovered in 1981 are of exceptional importance. Here the oil deposits are volcanogenic rocks. This type of collector has been encountered encountered for the first time in the practice of oil and gas exploration in Azerbaijan, and with its detection, a new direction was essentially confirmed in searching for Mesozoic oil.

However it is impossible to consider the oil of the volcanogenic Mesozoic deposits of Muradkhanly and Zardob purely Mesozoic. It is here, so to speak, in the secondary occurrence, that is, it migrated from the enveloping and covering oil-bearing Paleogene-Miocene deposits, having saturated the loose and fractured surface of the volcanogenic formations. It can be said that a pleasant inaccuracy occurred in the discovery of the Muradkhanly field: in searching for formations in the carbonate deposits, the geologists came upon oil content in the effusives.

Are the Muradkhanly and Zardob fields the only ones of this type? Are there geological conditions for the formation of similar fields and formations on neighboring areas of the Srednekurinskiy basin?

In order to answer these questions, we will turn to the materials of the last decade. During this period, a large part of the territory of the Srednekurinsky and Nizhnekurinskiy depressions was covered by the latest field geophysical studies which resulted in a significant pinpointing of the structure of the deep layers, detection and preparation for drilling of a series of Paleogene-Miocene and Mesozoic structures. Many of them were drilled, while the the others will be drilled out in the future by the association "Azneft'" according to the degree of outlook and potentialities.

According to the preliminary data of drilling and seismic exploration, relatively low- and high-promising zones were isolated. Within the latter, exploratory operations were outlined and are already being implemented. Analysis of the materials of exploratory geophysics and drilling indicate that many structures of the Yevlakh-Agdzhabedinskiy trough and the interfluvial area of the Kura and the Iori have geological structure that is similar to Muradkhanly. In addition, in addition to the deposits of effusive and carbonate Cretaceous, the covering Paleogene-Miocene deposits are also promising in these structures. These include the areas of Amirarkh, South Muradkhanly, Dzhafarli, Tarsdallyar, Gyurzundag and others. Deep exploration must be used here.

It is apparent from what has been said that the main trend in the search for Mesozoic oil both in the carbonate and in the volcanogenic formations has currently been acknowledged to be the Srednekurinskiy basin. In other oil and gas regions, for example, in the near-Caspian-Kubinskiy Oblast, although local oil and gas content was found in the Mesozoic deposits (Siazan monocline. Sovetabad, Keshchay, Begimdat-Tegchay), because of the inefficiency, the exploratory operations have practically been halted. In south and central Gobustan, on the areas of Dashmardan, Nardaran-Suleyman, Umbaki and others which at the meetings on the Mesozoic (1965 and 1969, Baku) were acknowledged as primary with depths of 5000 and 5,500 meters, the wells did not reach the target levels.

Therefore the task of stripping and studying the oil content of the Mesozoic deposits in Gobustan must be solved by drilling parametric wells in the central and northern parts of it (Sheytanud, Leninabad, Astrakhanka, under the cover) where the Cretaceous deposits occur at depths accessible for drilling.

On the Apsheron Peninsula (fields of Kyurdakhany and Geytepe), the section of Cretaceous deposits are in an argillaceous-marl facies that was unfavorable for oil content and consequently the exploration here was halted.

The zone of the Muganskiy monocline, the fields of Srednemuganskiy, Shorsulinskiy and Kyurdamir-Saatlinskiy zone (fields of Saatly, Dzharly, Sor-Sor, Karadzhanly) also proved to be not very promising.

Thus, in a comparatively short time, the direction and regions of searching for Mesozoic oil have changed repeatedly. This is understandable. Each stage of drilling and exploratory geophysics enriched the geologists with

data and helped to make the corresponding generalizations and to select the correct landmarks in the prospecting work.

The urgency of the problem of Mesozoic oil was raised sharply when the worked fields of the Apsheron peninsula were mainly explored, and the prospecting for the Miocene-Paleogene deposits in Gobustan and Kirovabad Oblast proved to be ineffective.

But why, in contrast to others, as the new, Mesozoic, trend in exploration evoked so many disputes?

Apparently the case here is that the objects and regions for prospecting for Mesozoic oil were selected mainly on the basis of the data of statistics, according to which more than half of the world reserves and extraction of liquid fuel is in the Mesozoic, and that it is productive in the neighboring countries, while the results were unsatisfactory.

But, unfortunately, these data are often used purely mechanically, without their deep scientific analysis. The oil and gas content of the Mesozoic deposits in the northern Caucasus and in other regions still does not mean that they mandatorily must be productive in all zones of Azerbaijan. Or, on the contrary, the content of oil in the layer of the productive mass in the South Caspian Basin are completely "dry" in other neighboring regions.

For example, in the post-war years, the searches for fuel on the territory of Nachichevan in the Devonian and Mesozoic deposits were fruitless, for in placing the wells they started from the oil content of these objects in the Second Baku and the Near East.

Therefore an important aspect of the problem of Mesozoic oil today is the selection of the region and the site of placement of the wells.

Is this work being done correctly, and are the wells being placed where they should?

It is appropriate to state here that the turnover of exploration determines the annual and long-term plans. The export commission represented by leading specialists of the production and scientific research organizations of the republic participate in this. They examine all the incoming recommendations, select the most substantiated and include them in the plan draft. Its compilation always took into consideration, in light of the new data, the recommendations of the especially convened all-union conferences on the Mesozoic which took place in 1957, 1965, 1969 and 1977.

This plan was further presented for discussion at the annually convened conference of geologists and geophysicists of the republic, supplemented, pinpointed and then presented to the Ministry of the Oil Industry. Only after detailed examination was the work plan approved by the Ministry of the Oil Industry.

This order for compiling the plan mainly excludes the placement of "surplus" wells. Nevertheless, some representatives of the scientific research institutes at times express their disagreement with the placement of wells in a certain region. What is the problem here?

The answer is simple. Many colleagues in the nature of their activity are usually engaged in some narrow problem or one region, and therefore the recommendations they make from the viewpoint of a comprehensive evaluation are not always substantiated and acceptable.

Based on the available data, can we now speak of the high or low promise of the Mesozoic deposits in Azerbaijan?

We believe that one should not raise any other alternative. In fact, the exploration operations for the Mesozoic were very complicated. But even in that that case where they were not effective everywhere, considerable work was done in this direction. Fields and formations were discovered, reserves were prepared and the most promising zones were established. Consequently, there are grounds to continue the exploratory operations for the Mesozoic deposits, but in stages and with more substantiation.

According to the developed comprehensive project, the geological exploration in the 11th Five-Year Plan is being carried out simultaneously in three directions, Pliocene, Paleogene-Miocene and Mesozoic with specific tasks according to the degree of study of their outlook for individual geological regions.

However, the rates of the work done in the Mesozoic are not satisfactory. As Dr. of geological-mineralogical sciences B. Grigor'yants correctly indicated in his article, as well as the subsequent responses to it, the problem of Mesozoic oil is still solved slowly. However, it is impossible to accept the critical remarks of the author regarding the production organizations' exploratory drilling and geophysical operations without consideration for the fact of structural noncorrespondence between the Mesozoic and covering deposits, which, as he says, is known in science.

This fact, as Professor S. Salayev correctly noted, has long been recognized by the absolute majority of geologists. For our part, we add that with the assumption of structural correspondence between these complexes, there would not be any need for conducting such expensive geophysical and structural-search operations.

Among the negative factors which influence the prospecting for Mesozoic oil, Professor S. Salayev correctly names the insufficient information content of geophysical methods of exploration in the complexly-constructed regions of Gobustan and the interfluvial area of the Kura and Iori, and as a consequence of this the drilling of not always reliably prepared structures. It is sufficient to cite this fact. In Gobustan and Adzhinour which are characterized by the most complicated surface and deep seismogeological conditions, seismic exploration, including the most modern modifications, with the exception of local sections, was ineffective, and in the coming years one could hardly count on positive results. Under these conditions, the data from even singly drilled parametric wells with seismic logging operations carried out at them are of great value.

The article of the senior scientific associate of the Azerbaijan Scientific Research and Planning Institute of the Oil Industry E. Madatov ("Another Approach Is Needed", VYSHKA, 5 March 1982) is questionable and poorly argued in our opinion. First of all, the author attributes to the participants of the discussion, B. Grigro'yanets, F. Ragimkhanov and G. Tumikyan, his opinion of the supposed groundlessness of the geophysical methods for exploration in solving the problem of Mesozoic oil. Then none of them spoke of this, while the subject of the polemics was essentially something else, the technique and regions of work.

Secondly, it is impossible to agree with E. Madatov in that part where he speaks about the excessive enthusiasm of the explorers of the depths with the anticlinal structures prepared by geophysical methods. At the same time, the author should have known that the prospecting wells on the explored anticlinal fold are generally placed on mutually intersecting profiles with the calculation that they will reveal the oil and gas content of the anticline, wings and pereclines of it , and that such buried structures as the Murdakhanly and Zardob fields which are devoid of surface oil manifestations, were revealed and prepared by geophysical methods in the form of anticlinal traps, while the formations in the future were traced beyond the limits of the anticlines.

The assertion of the author that the Mesozoic oil can be found on the basis of studies of core samples, in our opinion, discredits the enormous creative efforts of the specialist-geologists and drillers aimed at searching for Mesozoic oil.

The path to the Mesozoic is thorny. In the struggle for achievement of the goal, all geological exploration needs to be set on the level of the high requirements of today.

9035
CSO: 1822/253

ALI-BAYRAMLY OIL FIELD EXPERIENCES DIFFICULTIES

Baku VYSHKA in Russian 25 Jun 82 p 3

[Article by S. Garayev, in-house VYSHKA correspondent: "Towards the Warehouses of the Lower Levels"]

[Text] On the field of Kyurovdag even now well No 2 is operating smoothly. Exactly 27 years ago it discovered the oil and gas field here. Then it gushed from the upper part of the section with an output of 50 T of oil per day. During these years, the Kyurovdag oil workers have sent for refining over 30 million T of liquid fuel.

Now Kyurovdag is producing considerably less fuel than before. Now the upper levels of the productive mass are mainly being worked, and according to the forecasts of the geologists, there are many reserves of liquid fuel in the lower, deeply occurring formations. It is the first task of the drillers from the Ali-Bayramly administration of drilling operations and the operators to take them more quickly and set them at the service of the five-year plan.

In the beginning of this year, the brigade of drilling foreman Alikram Gasanov achieved great success. It drilled an exploratory well No 492 in central Kyurovda which revealed the tenth layer of productive mass. For the first time in the history of this field, an industrial influx of oil was obtained from this level.

Now next to the 492nd, the brigade of foreman Khalaf Bunyatov is drilling well No 1084 with planned dpeth of 3,700 m considerably ahead of the schedule. The geologists assume that it will be productive.

Intensive searches for oil in the lower level of the productive masses are taking place in the northwest part of the Kyurovdag field. The two wells that were drilled here last year confirmed the oil content of the eighth level. Now the explorers of the depths are aiming their efforts at verifying the productivity of the deeper beds.

The brigade of the eminent drilling foreman, Hero of Socialist Labor, deputy of the USSR Supreme Soviet Akif Amanov under complicated geological conditions i drilling well No 488 aimed at the tenth level of the productive

have considerably ahead of the schedule. The collective is strictly holding to the schedule of high-speed drilling. The introduction of new equipment and technological processes helped the foreman and his comrades at this well to reach such limits which made it possible to report ahead of schedule the completion of the plan for 2 years of the five-year plan.

Another, deeper well is being drilled at high rates by the brigade of the foreman Guseynag Akhundov. The use of the bits of advanced design made it possible for the collective to conduct drilling with a two-month advance of the schedule and to bring the productive time to 97.8 percent.

However, drilling of the exploratory wells called upon to increase at the Shirvan fields the reserves of natural fuel is not going successfully everywhere. For example, exploratory well No 480 must reveal oil content of the 15th level in North Kyurovdag. The drillers have successfully taken the planned depth. However, it is the fault of the testers that the set goal has not yet been reached. An accident occurred in testing the well, and all the subsequent efforts of the drillers to remove it from the accident were unsuccessful. The 480th had to be switched to operation of the upper, eighth level.

Well No 478 is now in a similar position. It is being drilled by the brigade for foreman Alikram Gasanov. The well was brought to the rated mark with accelerated schedule. Again the testers let them down. During the establishment of the so-called cement casing, they permitted a jamming of the pump-compressor pipes. They tried to remove the cement-stuck pipes, but failed. As a result, from September 1981 and even now work is continuing to eliminate the accident.

The history of exploratory well No 479 is instructive. It is being drilled on the area of central Kyurovdag by the brigade of foremen Gasangi Gasanov and Szhansakhib Babayev. The planned depth of the well is 4,300 m. It was set the task of outlining the oil and gas content of the tenth level of the productive mass, and also introducing the necessary refinements into the productivity of the eighth.

Ten years ago, as the chief geologist of the Ali-Bayramly administration of drilling operations said, R. Nadzhafov, exploratory wells were drilled here which revealed the oil content of the tenth level. However, for different technical reasons, breakage of the operating string, jamming of the pump-compressor pipes, cave-in of rocks, the objects were not tested. Great hopes were placed on the 479th well. When there only remained 105 meters to go to the planned depth, one serious complication after another took place and work is still being done to eliminate them.

If one judges from the statistical data, then the situation in exploratory drilling in the Ali-Bayramly administration of drilling operations is quite passable. In 5 months, the planned assignment for drilling has been covered by almost 14 percent. The indicators for drilling rates and for rates of wells with completed construction have been overfulfilled.

But, we repeat, these are the average statistical data. The leaders of the administration of drilling operations, and the entire collective of drillers need to focus the most serious attention on improving the quality of drilling the exploratory wells, and providing a strong barrier against accidents and defects in work.

9035
CSO: 1822/253

VISCOUS CRUDE RECOVERED AT KOMI FIELDS BY STEAM FLOODING

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 16 Jul 82 p 1

[Article by V. Il'in, senior engineer of Komineft' [Komi ASSR Oil Production Association] (Ukhta): "Hot Crude"]

[Text] The heating of a deposit of heavy crude has started at the Usinsk field.

The vehicle rolls easily over the concrete to the North. Behind remain drilling derricks, the terminal structures of the Usa-Ukhta-Yaroslavl oil pipeline and the gas-treatment plant. Another few minutes and ahead of us now are the gleaming, smooth surface of an aluminum jacket, and buildings that had been constructed in a row appear. Metal pipes tower from the end of the row. Light puffs of steam escape from them and rush upward.

The industrial complex that has risen up in the middle of the Usinsk oilfield is a real "heat factory," akin to the large district-heating plant that heats the city. But why is it here? In the middle of the forested tundra, tens of kilometers from the arctic oil city of Usinsk?

"At a depth of 1½ kilometers below us," says D. Konovalov, chief of the field development section of Komineft' Association, "there is a deposit of so-called heavy crude. Thick and viscous, this crude is not very mobile, and it congeals even on a hot day. It is practically impossible to get it by the ordinary method. Nine-tenths of it is left in the ground."

But the oilfield workers have still decided to lay a road to this wealth. In order to achieve success, they are counting on the help of superheated steam injected into the ground under high pressure. Thus it will be possible to heat the producing formation, to make the crude mobile and then bring it to the surface.

It is for this purpose that these impressive structures were built and five high-capacity steam generators were installed at the production-test area. For clarity, Dmitriy Vladimirovich sketches on a sheet of paper a profile of the deposit and a diagram of the placement of the wells and of the steamline grid. Another method of stimulating the formation--the creation of moist fireflooding within it--will also be tested here.

[illegible] another, complicated scientific and engineering problems rise up in the path of the heavy crude. Under the new circumstances, ordinary methods of recovery prove to be unsuitable, and new requirements thus are placed on drilling, on the buildup of facilities for the wells and on the oil equipment. For example, what can counteract the inevitable lengthening of the strings lowered into the well that is caused by the scorching steam? What should be used for pumping equipment? What must be done to avoid steam blowouts?

There are, in brief, many problems. In order to solve them, Komineft' Association oilfield workers have appealed for help from support agencies. An agreement was concluded about creative collaboration, based upon the Workers' Relay principle. A precise program of special research was developed. Participating in it are scientists and specialists of scientific-research and design institutes, Soyuztermneft' [All-Union Science and Production Association for the Thermal Recovery of Oil], the design office of the Baku Machinebuilding Plant imeni Leytenant Shmidt, the Izhimbay Oilfield Equipment Plant, and construction workers.

"We attribute great importance to collaboration with the interdependent activities," says association general director A. Gumenyuk. "Our partners will help the oilfield workers with advice and deeds in the environment of a major scientific and technical experiment that is of industrywide significance. As a result we are counting on getting 3 times as much oil from the deposit as we would with ordinary technology."

Right now is a busy time for the oilfield-facility workers, the builders and the designers. They have committed themselves, during the country's anniversary year, to get the first results of the experiments and to choose the most effective and economical method for using the results thereof on an industrial scale. In charge of the work are specialists of the Krasnodar Administration of the Soyuztermneft' Science and Production Association. Production engineer V. Vasilen', electrical engineer S. Sopkevka, mechanical engineer A. Pridatko and heating engineer Yu. [illegible] are working hand in hand here with the oilfield-facility workers and the builders.

The solutions, creative work of the collective that is supervised by N. Afanas'yev, chief of the department for increasing formation productivity, was crowned with success recently: the first steam generators were started, and the first injection wells were mastered. Heating the deposits has started.

[illegible]
CSO: 1822/184

ROMANIA LAUNCHES SECOND NEW-SERIES TANKER FOR SOVIETS' CASPIAN FLEET

Baku VYSHKA in Russian 5 Jun 82 p 1

[Article by V. Samoshkin, special APN [Novosti Press Agency] correspondent (Bucharest): "In the Name of the Baku Commissars"]

[Text] A light rain was drizzling on the Dunay when the tanker "Meshadi Azizbekov" was launched at a Romanian shipyard. But it did not mar the overall uplifted mood that reigned there.

The "Meshadi Azizbekov" is the second tanker in a series of bulk-oil ships that will be produced at the Romanian shipyard for the Soviet Union during the current five-year plan. These tankers are intended for the Caspian Shipping Line. From the Caspian also come the names connected with the Transcaucasus's revolutionary glory. The first in the series was the "Sergey Kirov," which is now standing at a dock. The installation of equipment on it has been finished, and finishing-up work is being performed. It was been decided to name the remaining ships, beginning with the "Meshadi Azizbekov," after the 26 Baku commissars.

The solemn moment approaches--the ancient ritual of the "christening." Young brigade leader Maria Moraru is charged with breaking the bottle of champagne on the ship's stem. She and her women's brigade did excellently all the insulating work on the tanker. The winches rumble and, to applause, the steel hull of the "Meshadi Azizbekov" is placed smoothly in the Dunay's waters. There are congratulations, handshakes and collective snapshots with Soviet specialists and their families for keepsakes.

Here on the shore I have a brief interview with George Chokine, the enterprise's commercial director.

"The tankers of this series," he says, "are the largest ships that Romania is building today for the Soviet Union. The 'Meshadi Azizbekov' has a load capacity of 7,000 tons. In all, according to a long-term agreement, by 1985 we shall fabricate 18 tankers and 13 lighters. The main share of the shipyard's output goes to Soviet orders, exports to the USSR never having been so great before."

And George Chokine has something with which to make a comparison. He himself has been working at the yard since 1946, and he recalls so well that ships for our country have always been made here. First there were fishing boats--wooden and

[illegible] then barges, river and maritime motorships, and dry-cargo carriers. In all, about 500 of the most varied ships have been built.

"The 'Sergey Kirov' type tankers," says engineer-inspector Aleksey Semonovich Sorokou-[illegible], who is in charge of the specialists' group and representatives of Sudoimport [Production Association for the Export, Import and Repair of Ships] "is the latest word in our collaboration. They are intended for sailing areas of the Black, Mediterranean and Caspian Seas and through the Volga-Don and Volga-Baltic system. The ships are of great length and small draft, and these are their advantages. I would also include as indubitable merits the high degree of automation of all processes--from controlling the propulsion plant to metering the cargo. The crew has single-berth cabins with all the conveniences at their disposal."

In less than 2 months the prototype ship, the "Sergey Kirov," and in the fall also the "Mekhmadi Azizbekov," will set out on a voyage. And then Romania's shipbuilders, true to seagoing tradition, will wish the crew: "Seven feet under the keel!"

11409
CSO: 1823/254

MACHINE USED TO MECHANIZE PIPELINE WELDING

Kiev PRAVDA UKRAINY in Russian 11 Jul 82 p 3

[Article by Ya. Zhukovskiy, special correspondent of PRAVDA UKRAINY: "The Route"]

[Text] Mikhail Nikolayevich Fedchenko and his comrades began the first most difficult kilometers of the route not far from Tarashcha, beyond the settlement Velikaya Vovnyanka. This site was designated at the planned mark "3752": this is the distance from here to Urengoy. The brigade has already been created here. The builders have come from Yaroslav, Vologod and Saratov Oblasts. But it was found that although they were younger than the brigade foreman, they knew their business, they were welders of the fifth and sixth classes. Great fellows! There would not have been any difficulties, almost all of them had worked on this kind of pipe, if they had not had to face a completely new technology, welding by machine.

I arrived at the route when the 335th butt-joint had already been welded. They welded quickly, in counted minutes, and reliably: monitoring showed that there were no defects. The numbers was marked on the pipe with yellow paint, including the operators of the unit. But at the beginning of the path they became nervous. Of all the arrivees, only one, Leonid Marugnich had seen this welding apparatus somewhere near Petrovsk. Although the apparatus was made in Kiev in the Institute of Electric Arc Welding imeni Ye.O. Paton, and the entire unit had also been manufactured here in the Kiev branch of the special design office "Gazstroymashina," and although its creators were quite closs by, it was namely Marugnich who held a symposium here in order to lecture all those interested.

Tall, black-haired, with thick wiskers a man with severe appearance, Marugnich was completely transformed when he showed how to lower the arc, encompassing pipe, how the sliding contact moves, and what kind of electrodes are here, powder wire turned into a coil. All prove to be unusual, and the welders looked with mistrust, even Fedchenko approached, listened and suddenly said:

"Look, you will work as the operator,what do you say? Good,consider yourself the operator."

Thus it began. Then Serezha Sham, a Komsomol member, a jolly mischievous fellow from Poltavshina came to the operator. Marugnich took him on as his partner. The machine operator from the power unit also supplied Komsomol workers. Thus, a young people's team was formed. The same yellow paint was used to write on the cab of the apparatus: "Komsomol team of electric arc unit 'Styk' on construction of the gas pipeline Urengoy-Uzhgorod."

Now 8 kilometers have already been passed. "Styk" does the work of several good welders and does it reliably. Nevertheless each seam mandatorily passes examination, is felt and run over by hand. This is not to test it for strength, this is done later ,by all the regulations, illuminated by x-ray. This is in order to compare whether the machine competes with the experts.

"Never mind," they said as by chance. "It will do."

And they went to their places.

The scientific associate from the Institute of Electric Arc Welding came from Kiev and also felt the seams and looked at the results of the control tests. He nodded his head with approval: not bad. Andrey Nikolayevich Kutovoy did not leave the machine, he brought another sliding contact made in another way and consulted with Marugnich which was better. There was no reason to make it larger, the fellows would master it, and this, as Kutovoy said was convincing that the unit was reliable.

"Styk" was made several years ago, and passed tests under different conditions. Today this unit is series manufactured at the Kakhovka plant of electric welding equipment. On the section between Velikaya Vovnyanka and Stanichovka, two of these units are operating. Not all of the welding is done by machine yet, this is why the foremancomes to compare. It was planned to also mechanize the manual operations here.

I ask what is the delay? For science?

"No, rather organization of the matter," answers A.N. Kutovoy. "The technology has been worked out, it is necessary to master it."

Here on the route, standing at the pipes laid into a line, it easy to imagine how this should be organized. Three powerful tractors move one after another with power units installed on them and welding apparatus suspended on the boom. The first, reaching the edge, seizes the ends of the pipes, squeezes them, centers them, and making temporary welds in several places, moves futher. The second apparatus makes the route seam and the hot seam. Then the third unit works. It applies the lining layer, cleans the seam, allowing the monitors to use all their iridescent isotopes ("bring your 'Iru' here!") to be convinced that the work is faultless, and the welded butt-joint, as it should be, is stronger than the pipe itself.

It is not done this way now. "Styk" only performs the final operation. It puts metal into the groove and makes the final seam, while the first two layers arelaid by hand. There is an attachment for centering the pipes, but more work is done here under the command of the brigade foreman, sitting on the pipe, he shows with his hands to the machine operator of the pipe layer where to turn the multiple-ton bulk, higher or lower. It is true that if the electric arc welding unit was not working here, the butt jionts would have to be scalded another three times. Three layers means six welders. But "Styk" does this in one pass. Instead of 11 experts of the highest class, 5 are working: Grisha Rybchinskiy, Volodya Maslov, another Volodya Lyakhov, Valeriy Motriy and their brigade foreman Mikhail Fedchenko. During a shift they prepared 20, and sometimes 22 butt-joints, half a kilometer of the route.

Half a kilometer, 500 m. It seems a little if you compare it with the length of the whole trunkline. Bu this is one line, and there are several of these lines, even on this section alone of over 400km which the subdivision of the Ukrainian construction trust is laying.

The manager of the trust "Ukrtruboprovodstroy" Vladimir Antonovich Sergiyenko is most concerned now that the equipment and people freed up on other construction sites come here as quickly as possible, to the Ukraine.

"Rates, rates," he repeats over and over. "It is necessary to use all potentialities in order to increase them rapidly. The schedules are rigid , but we count on finishing our section even earlier than planned. We have remarkable people and they will manage. Talk to those who are already on the route."

I am conversing with Fedchenko. He smiles and notes cautiously:

"We have only just begun, there is still no swing. What can we count here?"

However it turns out that there are calculations. And very convincing ones. At the base were the pipes are arriving, they are immediately welded with two seams. They are connected very well and very reliably. A so-called pipe length of 23 m is produced. Thus, under field conditions half the number of butt joints have to be welded, 45 on a kilometer of route. If the lengths are made of three and not two pipes, then there will only be 30 butt joints on the same kilometer. Now the brigade of Fedchenko is passing 500 m per day and will be able to do 750. What a difference?!

I went to the base. It is located in Mironovka, at the very highway. You immediately recognize this place from the precisely laid piles of pipes and trailers in which the builders usually live.

Welding under stationary conditions is considerably easier, although the same strength is naturally required. It is simpler because the pipe can be turned and the weld can be made without moving from one place. This is how they operate here at the assembly stand: when the pipe makes a

complete turn, two men can successfully connect a butt joint with a strong seam. Then this length is turned to the other stand, next to it, and the final forming is done by a welding apparatus, a semiautomatic unit PAU-1001 V. It hits the pipe, hangs above the butt joint and also remains fixed, the entire pipe length is turned. This welding line was fabricated by Kiev experimental electromechanical plant. Like "Styk" it replaces several skilled welders.

What is preventing connection of three pipes into lengths instead of two?

"There is no obstacle," answers the operator Petr Filyuk. He is comfortably sitting in a glassed-in cab, on a round stool, dressed in a light burlap coat, and checkered shirt. His eyes are not covered by dark glasses because he does not see the arc, the welding is done under flux. Filyuk turned toward me, and indicated both sides of his test stand. "This is how I travel from end to end. What is it worth it to us weld two butt joints on each length? It is even better, fewer trips."

The welding line allows it, but organization of the work does not. Of course it is more difficult to transport a triplex length of pipe, but this experience is available, then why is it not immediately used at this construction site? It turns out that it is impossible because there is simply nothing to transport the 20-ton lengths of pipes. There are no pipe carriers here with that lifting capacity. There are no powerful pipe layers either at the welding base in Mironovka, or on the route where it is especially important to hold the pipes strictly horizontally, for centering.

"We are waiting for these machines," V.A. Sergiyenko said on this matter. "We are waiting. The powerful 'KrKZ's' should come, the question is being solved with others. But the equipment that we undoubtedly need is only part of the problem. The main problem is the people, their experience and skill, and what is no less important, their mental calm and their mood. The conditions under which they are working and living are also rates."

The rear of the construction site is the preparation of housing, and the setting up of daily conditions for the builders. It is necessary to create worker's cities along the route, in Cherkassy, Kiev, Vinnitsa, and Khmelnitsa Oblasts, and to equip them.

One of these cities is located in the same Mironovka: 106 trailers. Here are the services of the construction section and the housing areas. I walked on the straight "streets" marked off into a line, and visited the dormitories and apartments for families. The rooms are small but the closeness does not cause inconviences: there is a dining room for four, bedroom, kitchen with gas stove, and bathroom with hot and cold water. There are televisions almost everywhere. The head of the section V.S. Shmyglo even thought of a parking place for cars, since many who came here in their own cars leave them directly at the entrance to the trailer.

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PIPELINE CONSTRUCTION REPORT GIVEN

Workers Respond to U.S. Equipment Ban

Moscow KOMSOMOL'SKAYA PRAVDA in Russian 23 Jul 82 p 2

[Article by A. Vesel'yev, deputy minister of construction of oil and gas industry enterprises of the USSR: "Siberian Gas Arrives on Schedule"]

[Text] What can be the symbol of industrial might! The steel geometry of chemical production, pipes of plants, giant furnaces and converters. It would seem that there is no more impressive structure. But just imagine an apparatus almost 5,000 kilometers long. This is precisely the enormous, complicated, unique fine apparatus which is the gas pipeline that we have to create.

Among the forests, steppes, and mountains, through permafrost, swamps and rivers, under the hot sun and in cold frost, in the spring season of bad roads and under cold autumn rain, thousands of people are extending the steel line, and welding tens of thousands of seams. Their responsibility is multiplied by these giant scales. Here negligence and defects are simply impermissible. If only one seam is not strong, the entire thousand-kilometer trunkline will come to a standstill.

X-rays, isotopes and ultrasound are used to guard the quality of each butt-joint. But the most important guarantee is the worker's honor and the high skill of our welders.

West Siberia-West Europe. Today this is the route of the super pipeline. The gas route will become the line of mutually advantageous contacts. The blue fuel from Siberia will go to the FRG, France, Italy and other countries which should, in turn, supply us with pipes and equipment for gas pipelines.

But on the path of the Siberian gas, the political activists from the White House would like to place a powerful plug. They have undertaken sanctions banning supplies to our country of any equipment for extraction of coal and gas. The ban has been extended to equipment with West European or Japanese mark, if it is made through American licenses.

What is the United States proposing West Europe in exchange? They will invest money in a Transalaska gas pipeline which is smaller in length and output, but costs triple and now only exists on paper. The first 300 kilometers of the

trunkline have been welded on the Soviet gas pipeline, and work is boiling from Pripolyarye to the Carpathians. The American sanctions will not disrupt our plans. It is worth it for the Washington politicians to remember recent history. In the early 1960's, a ban was made on shipments of pipes from the FRG to the USSR. What happened? In a short time we set up output of large diameter pipes. Now we have great potentialities for overcoming the obstacles. "The Russians themselves will not be able to make powerful gas turbines," Washington announces. At the same time in the USSR the Leningrad association "Nevskiy zavod" is producing such pipes, and the Leningrad metal plant is producing a series of gas pumping units with power of 25,000 kW. "The Russians do not have the pipe-layers equal to 'Caterpillar'," the proponents of the sanctions persistently assert. At the same time the Sterlitmak plant "Stroymash" only 2 years ago produced the pipe-layer "TG-502" which is not inferior to "Caterpillar." Heavy pipe-layers, powerful rotary excavators, swamp vehicles and all-terrain vehicles "Tyumen'" this is the powerful domestic equipment arming the builders of the super pipeline.

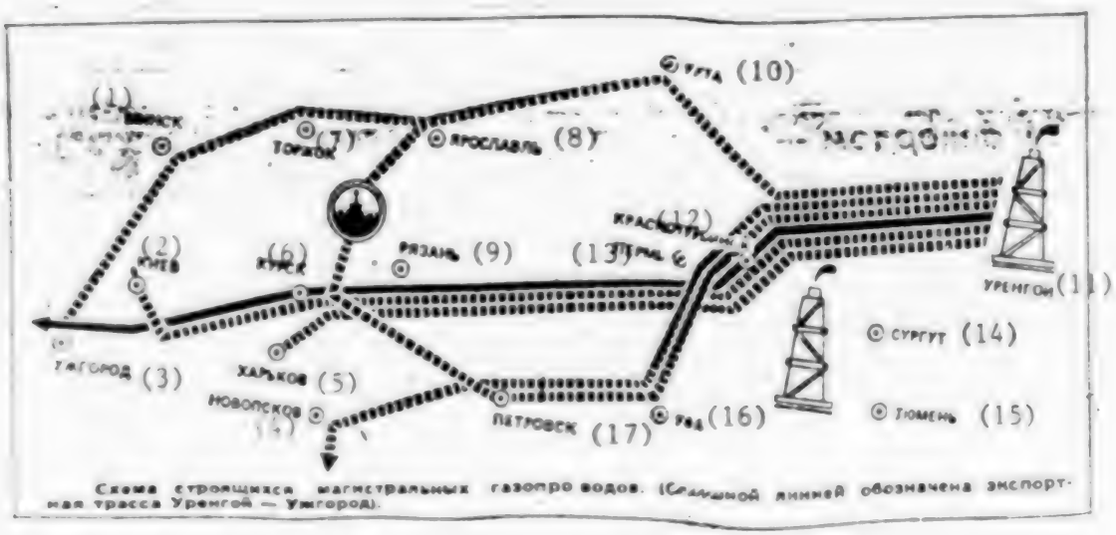


Схема строящихся магистральных газопроводов. (Сплошной линией обозначена экспортная трасса Уренгой — Ужгород).

Plan for Main Gas Pipelines Under Construction (solid line designates the export route Urengoy-Uzhgorod)

Key:

1. Minsk
2. Kiev
3. Uzhgorod
4. Novopskov
5. Kharkov
6. Kursk
7. Torzhok
8. Yaroslavl
9. Ryazan
10. Ukhta
11. Urengoy
12. Krasnoturinsk
13. Perm
14. Surgut
15. Tyumen
16. Ufa
17. Petrovsk

The builder is the main active individual in this creative work of unheard of scale which is developing from Siberia to our western boundaries. The implementation of the project of the century depends on him, the Soviet worker, engineer, builder, scientist, and not on the White House. At the meetings which took place in the collectives of the creaters of the trunkline, firm decisiveness to respond to the American sanctions with new labor advances, search for reserves and their use were expressed. Here is one of the examples. A total of 150 kilometers in a season is the frontier towards which the brigade of USSR State Prize laureate B. Diduk is confidently heading.

In the collective creative search of the workers and engineers, valuable initiatives, interesting and promising forms of labor organization are being born. In the association "Sibkomplektmontazh" a set-block method of construction was developed and introduced. We are now widely using it at the route of the export gas pipeline. Comprehensive production lines have been set up which on their sections are fulfilling work from cleaning the route to welding butt-joints and laying pipes. They can lay a kilometer of trunkline per day. There are dozens of these lines. The rates are intensive! They are assigned by enthusiasm, sober calculation, skill and the experience of the Soviet people.

For the builders of the trunkline we are striving to create the maximum comfort and convenience in the route settlements. The builders of these settlements can be the envy of city dwellers. In fact, after work can you always head to the sauna or to the swimming pool or to the tennis court or the volleyball court? They are at the route. Now student building teams are participating in the creation of these watch settlements. We are awaiting intensive labor from them and help for their peer builders.

The creation of the export gas pipeline is a business not only of the builders. Plants manufacturing construction equipment and gas pumping units, scientists, designers, transportation specialists all of them are also direct participants in the central construction site of the five-year plan. The steel line of gas pipelines which is being laid in our country this five-year plan could circle the globe twice. Today the USSR is the leading gas power in the world. In 1985 the volume of extraction of blue fuel will be brought to 630 billion m^3. We are confident that these frontiers will be attained. We are given this confidence by the experience of constructing super long distance gas pipelines, our industrial might, enthusiasm and creativity of the Soviet people.

Book Describes Pipeline Construction

Moscow KOMSOMOL'SKAYA PRAVDA in Russian 23 Jul 82 p 2

[Article by I. Kuznetsov: "Book Shelf of the Propagandist"]

[Text] The book "Gas-Pipes," which was published by the publishing house "Izvestiya" is small, but the propagandist can find in it vast numerical and factual material.

The book is based on the story of the construction of the export super pipeline Urengoy-Uzhgorod.

The book shows the labor of the builders who are successfully solving the complicated technical problems.

Readers' Pipeline Questions Answered

Moscow KOMSOMOL'SKAYA PRAVDA in Russian 23 Jul 82 p 2

> [Text] Construct the Urengoy-Uzhgorod gas pipeline on schedule. What is being done in the current situation in order to make this real?
>
> How is West Europe and Japan reacting to the sanctions of Washington?
>
> How much do we need the help of the Western firms and what can we do ourselves?

We have a lot of first class domestic equipment, including that operating at the construction of the gas pipelines. I read once that the foreign firms have acquired a license for the Soviet method of electric contact welding of pipes. Please discuss this.

P. Kalinichenko, engineer of the plant "Energomash," veteran of the Great Patriotic War, Belgorod.

The method of electric-contact welding is a domestic invention. Now the scientists of the Institute of Electric Arc Welding imeni Ye. O. Paton of the Ukrainian SSR Academy of Sciences jointly with specialists of the Ministry of Construction of Oil and Gas Industry Enterprises has created a set of machines "Sever" for electric contact welding of pipes 1220-1420 mm in diameter. The units have been introduced at the construction of the gas pipeline system Urengoy-center of the country. This makes it possible to improve labor productivity 4-5-fold, considerably improve the quality of the welding operations, and release a considerable number of highly skilled welders.

Many foreign firms have become interested in the extensive use of the method of electric contact welding of pipelines. Licenses for this invention have already been acquired by American and Japanese firms.

Construction and opening of the Urengoy-Uzhgorod gas pipeline has been proposed to be completed earlier than outlined by the contract. How much of this is real, especially in the current situation?

T. Sarsenbin, brigade foreman of the Komsomol-youth brigade of concrete layers from the trust "Ekibastuzenergostroy," Pavlodar Oblast.

Now work is developing on the entire route of the Urengoy-Uzhgorod gas pipeline. The most skilled builders of main gas pipelines are being sent here with the comprehensive production lines. There will be 55 of these lines. When they reach the planned output, then they will be able to lay roughly 800 km of pipes 1420 mm in diameter every month. All of this will help to complete construction of the export gas pipeline on time.

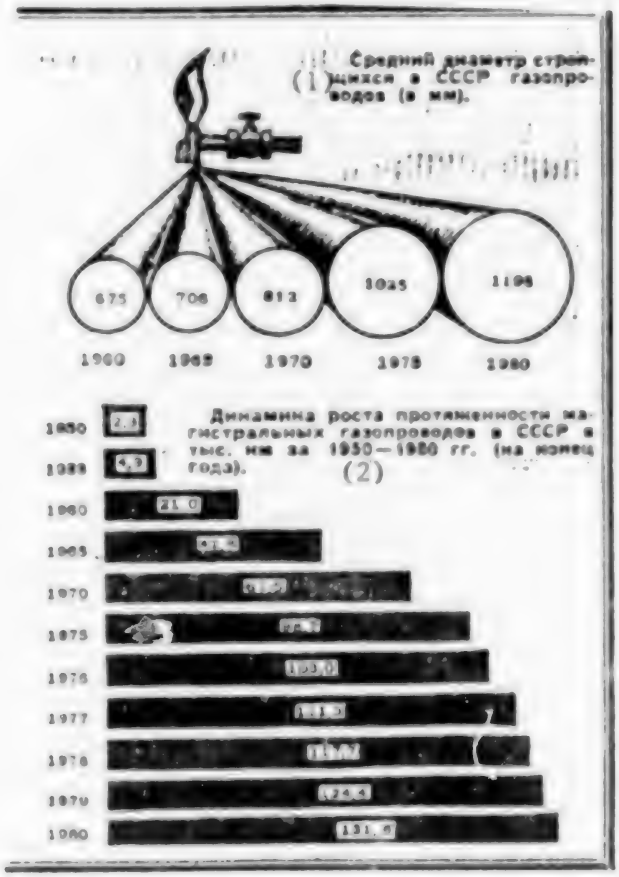
The Leningrad association "Nevskiy zavod" imeni V. I. Lenin . The young specialists of the association have just finished lengthy testing of a powerful gas pumping unit which will be sent for construction of the export trunkline Urengoy-Uzhgorod. The Leningraders have kept their word given at the meeting of protest which took place at the enterprise because of the discriminatroy decision of the American powers to ban shipment to the USSR of equipment for constructing the gas pipeline. The domestic unit is not at all inferior to the foreign analogs.

Competition on the principle "Worker's Relay Race" during which the collectives of machine builders have decided to fabricate the necessary equipment for the construction site in shorter schedules guarantees timely start-up of the compressor stations and the entire gas pipeline.

Gas, as is known, is an inexpensive fuel, and each is accustomed to using it in his daily life. But we know that it is not easy to extract. When the export gas pipeline is built won't supply of gas to our houses decrease?

G. Kalina, teacher of the middle school No 35, Gorkiy.

The export gas pipeline will immediately feed several West European countries. But the danger that it will have a negative effect on our internal energy balance does not have any ground.



KEY:

1. Average diameter of gas pipelines constructed in the USSR (in mm)
2. Dynamics for growth in length of main gas pipelines in the USSR in thousand km for 1950-1980 (at the end of the year)

In 1980 435 billion m^3 of gas were extracted, and in 1985 we will extract 630 billion m^3 of gas. New gas-bearing provinces are being discovered by the geologists. The gas that we will supply on the contracts will be a small percentage of the gas extracted in the country. Thus we will both supply ourselves and fulfill the conditions for the "deal of the century." This was indicated in the decree of the CPSU Central Committee and the USSR Council of Ministers which approve the patriotic initiative of the workers to guarantee timely opening of the Urengoy-Uzhgorod gas pipeline. The decree clearly says "the domestic consumers will receive gas in volumes determined by the five-year plan, and the foreign consumers will receive gas according to the contracts."

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PIPELINE CONSTRUCTION VOLGA CROSSING DESCRIBED

Moscow IZVESTIYA in Russian 15 Aug 82 p 1

[Article by B. L'vov, and V. Ivanov: "Crossing the Volga at the Construction of the Urengoy-Uzhgorod Gas Pipeline"]

[Text] Unusual rafts are movingfrom Kazan upwards on the great river. Each of them is 2 kilometers long. In each of them there are five-seven links of pipes welded into a single line. They are insulated and covered with reliable protective armor.

The oncoming ships accompany these caravans with greeting horn blast: the way is always open for the tow cutters with the inscription on the side "Ministry of Construction of Oil and Gas Industry Enterprises." Who in these parts does not know that the construction-installation base of the tsurtbadministration of underwater-engineering operations of the all-union association "Soyuzpodvodtrubotrovodstroy" is located on the left bank of the Martyshiy city of Zvenigovo. This is the starting place for crossing of the Urengoy-Uzhgorod pipeline of the Volga, one of the 32 largest water obstacles on the path of the export gas pipeline.

The underwater bridge here extends 2.5 km. It will be a "two-lane." The Siberian gas, coming from Pomarov to Zvenigovo, will travel in two parallel streams under the Volga to the right-bank upland, where again merging into a single channel, it will be sent to the Transcarpathians. The Volga underwater gas bridge isbeginning to develop in the blinding flame of an electric arc near the capital of Tatariya. Here is the maker of fire seams, Nikolay Bagunov, an extra-class welder. Together with his comrades in the brigade he has been preparing the strongest underwater passages for gas through large rivers for 18 years already.

"We have many veterans of underwater construction," says the deputy head of the association A. Yermolov. "But I would like to make special note of the colleague of Bagunov, the welder Vladimir Aleksandrovich Gryazunov. During the quarter of a century of work in our collective he has left his most reliable fire seams on the crossings over the rivers of central Asia, East Siberia and the Volga."

On the left bank of the Volga more than a kilometer of siphon has already been prepared. According to the schedule, the laying of the crossing is set for June 1983. The underwater builders have presented their counterplan: in the name of the 60th anniversary of the formation of the USSR, they will complete work in October of this year.

There remains a lot for the machine operators to do, to extract 630,000 of ground. The crew of the suction dredge "TZ?-251" headed by V. Iskanderov is ahead. Every day the length of the trench increases by dozens of meters. The powerful cutter tiredlessly lays a channel at 20-meter depth for the future gas river. All-powerful streams ofhydraulic excavators go into operation, straightening the trench, and bringing it to the planned mark.

A cool wind flaps two green flags on the mast of the ship: complex underwater-engineering operations are beginning. Within another minute the diver Farkhas Shaydulin begins to decend. His task is to check the bottom of the gas pipeline. It is not easy work: visibility at the 20-meter depth is actually zero. But Shaydulin, the senior diver from the diving station is experienced. He has spent over 3,200 hours under water.

"All is normal," he reports returning to the boat.

Now the work is for the most powerful suction dredge "Podvodnik-1." The teeth of its powerful bucket crushes the bottom rocks, bringing the channel to the planned mark. But now the crew of "Podvodnik-1" is working on laying the crossing of this gas route at Kamya, although its work front is already prepared on the Volga, The suction dredges of the Ministry of the River Fleet are actively working here together with the special ships of the Ministry of Construction of Oil and Gas Industry Enterprises.

The work rate on the shore is steadily rising. Platforms are being prepared for the most powerful wenches which will extend the 6,000 T bulk of the siphon through the Volga channel and carefully lower it in bottom of the underwater trench.

The summer days are becoming shorter. The harbingers of winter are blowing more often over the river, raising lead-colored waves. But the work does not stop for a minute. A new stage has begun: crossing the Volga.

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PIPELINES

EQUIPMENT FOR ROUTE DESCRIBED

Rotary Trench Excavator Works Well

Moscow STROITEL'NAYA GAZETA in Russian 25 Jul 82 p 1

[Article by R. Yevseyeva, correspondent of the press-center of the Ministry of Construction of Oil and Gas Industry Enterprises: "Word And Works"]

[Text] Numerous complicated and labor-intensive operations need to be done in order to lay the gas-transport trunkline. The higher the degree of industrialization and mechanization of these operations, the higher their rate. Therefore, timely and complete provision of the route workers with the necessary equipment is of primary importance for successful completion of the central construction sites of the five-year plan.

The correspondents of STROITEL'NAYA GAZETA and the press-center of the Ministry of Construction of Oil and Gas Industry Enterprises relate how this task is being solved.

In the assembly shop of the Moscow Experimental Mechanical Plant normal work is underway. The caps of the "Kirovtsev" are being painted yellow. Giant rotary rings tower above. The vast shop costumarily collects all the component parts for future rotary excavators.

"The latest rotary excavator 'ETR-254,' which has again been given the sign of quality, is our most famous product," says the director of MEMD [Moscow Experimental Mechanical Plant], Vladimir L'vovich Leykin.

"When our country's first trench rotary excavator was produced in 1949 for oil and gas pipelines, no one probably could even imagine what surprising machines we would produce. In recent years we have made many unique samples of special equipment for builders of oil and gas routes. In addition to the rotary excavators, we are now manufacturing modern machines for cold bending of pipes. Now in the domestic pipeline constructiontests are currently underway of multiple-layer pipes, a promising innovation, and at the plant we are already finishing the machine 'I-382' for bending the pipes. We are also producing winches of increased power for pulling the pipelines through water obstacles. Our plant manufactured the country's first swamp vehicle 'Tyumen'."

Now, at the plant one can often hear the words "for the first time." Starting this year manufacture of a new model of trench excavators has been set up with narrow rotor for working trenches in permafrost soils, "ETR254-01," and next year the plant is faced with fabricating an experimental model "ETR-305" based on the "K710" tractor.

"Soon work will begin at the MEMZ on an experimental sample of a new Soviet pipe-layer," relates A. Sushkin, chief designer of the special design office "Gazstrovmashina," which neighbors with the plant. "The pipe-layer with variable caterpillar track is a machine which is not yet known to our builders. The design solutions make it possible for the machine operator with large load, without leaving the cab, to additionally increase lateral stability momentum of the pipe-layer, having placed the caterpillar tracks wider apart. Now our designers are involved in developing new pipe-laying machines with variable caterpillar track with lifting capacity of 63 T, powerful pipe-length carriers on rubber-metal caterpillar tracks, and trailers for transporting overweight."

"As you see," says A. Sushkin, "all our developments are aimed at creating a unified set of machines and mechanisms which guarantee high productivity at all stages of construction of the modern main pipelines."

It remains to add that the designers and machine builders have adopted increased commitments for accelerated output of the new reliable equipment for the route. Their word agrees with their work.

Lines Work Smoothly

Moscow STROITEL'NAYA GAZETA in Russian 25 Jul 82 p 1

[Article by G. Yerlykov engineer: "One Day of the Line"]

[Text] I was awakened by the brigade foreman of truckdrivers Pavel Antonov precisely at five. In another 30 minutes the powerful machines left the station. We headed to the station in Staroyuryevo, where two carloads of pipes had arrived the evening before.

The unloading-loading went hurriedly.

"From the firm 'Mannesman', FRG," the suspension installer, Nikolay Gorbunov, read the inscription on the pipe. "No matter how Reagan tries, it is apparent that it is more advantageous for the West to trade with us than to dance to the American tune."

The trucks went from the station to the base of the line of I. Rozanov which was located at the settlement of Aleksandrovk in the Tambov Oblast. Until this time they had worked on the routes Urengoy-Petrovsk, Urengoy-Novopskov, and now on the export route. The section that they have been assigned here is 1.5-fold larger than at the previous gas pipelene, and the time is equally short.

but it should be said that this does not disturb the collective. Less than 4 months have passed since people arrived here, and the impression is created that they have been living here for years.

The gas pipeline has literally grown in front of my eyes. Now the machine operator of the pipe-layer Boris Ivanov seizes a 36-meter length, carefully connecting its already treated end to the pipeline whose other end disappears beyond the horizon in the East. Within minutes the welders from the team of Lat'yana Petrova hurriedly makes the root seam. The welders replace each other, making a so-called hot passage, welding on the facing and the filling seams. Soon the butt-joint is ready. And this is how the entire shift continued.

The brigade of excavation operations of Yuriy Kovalev was preparing a front of work for the installation-laying column of Ye. Bunin, lagging behind the welders by 1.5 kilometers. Five single-bucket excavators advanced forming a chain and monotonously waving their proboscises. Three rotary excavators dig into the ground on even sections between them. There was no time for lingering: six powerful pipe layers from the Japanese firm "Kamatsu" and our Sterlitamak plant were following behind in a dense line.

By the end of the day, after connection of the contacts of the electrical-chemical protection measuring and cut-off fittings the kilometer of gas pipeline was ready for testing.

"What can explain these rates? Don't you have fewer machines than in the majority of other subdivisions on the route?"

"In fact, some of our equipment is still in the previous place," answered the head of the section S. Svartsev. "But we have organization. The equipment works round-the -clock, without any contract separateness. We all, even on the line, have a common single contract." There is something to be learned in the line of I. Rozanov. Having been there, I was convinced that the counter-commitments adopted by the collective, to finish the 136 kilometers of pipeline by the 60th anniversary of the formation of the USSR, will be fulfilled.

Equipment Continues to Pour in

Moscow STROITEL'NAYA GAZETA in Russian 25 Jul 82 p 1

[Interview with the Deputy Minister of Construction of Oil and Gas Industry Enterprises G. Arendt by correspondent G. Ovcharenko; date and place not specified: "We Are Coping by Our Efforts"]

[Text] The flow of equipment sent to the route Urengoy-Pomary-Uzhgorod increases with each day. Recently 50 swamp vehicles "Tyumen'," over 40 rotary excavators "ETR-254," several pipe welding bases, about 20 multiple-station welding units, over 250 pipe-length carriers, other machines and mechanisms developed and manufactured by Ministry of Construction of Oil and Gas Industry Enterprises jointly with other ministries and departments have been shipped here.

Our correspondent G. Ovcharenko met with the Deputy Minister of Construction of Oil and Gas Industry Enterprises G. Arendt.

[Question] Georgiy Albertovich, how much equipment has been provided for the builders of the Urengoy-Uzhgorod gas pipeline?

[Answer] I can confidently say that even now the mechanical supply on the route makes it possible to open it on schedule.

[Question] In other words, even if the West European firms bow to the pressure of the U.S. administration and refuse to cooperate with us, this would not affect the fate of the export gas pipeline?

[Answer] If it does affect it, then it will not be in the same way as Mr. Reagan hopes. Apparently he has a poor idea of our economic potentialities. The pipes delivered from the West are only 12 percent of all the pipes needed to build the gas pipeline in the 11th Five-Year Plan, and do not play a decisive role.

We have our own equipment, and each year there will be more. The quality of the swamp vehicles, pipe-layers, welding automated systems, and other mechanisms mainly already satisfy the requirements of the route, although there still is something for the designers to work on here.

Manufacture of gas-pumping units of a new generation with power of 25 mW is beginning. They have operated in a block basement-free design which makes it possible to roughly reduce by half the labor outlays for their installation.

[Question] This means that the foreign economic policy of the United States is doing more damage to its partners than the Soviet Union?

[Answer] Of course, this is openly indicated by the sensible politicians and the economic experts in the West.

But, of course, we need to actuate in the shortest time the maximum possible resources in order to cover this shortage in equipment which we counted on obtaining through international integration of productive forces.

It is not easy to do this, therefore the initiative of the Soviet people approved by the CPSU Central Committee for accelerated output of equipment for the route is important and timely.

In a word, there is no doubt that our country will cope with the assignment of the five-year plan for construction of the main gas pipelines with their own forces.

We will not exhaust our readers with numbers. We will only repeat that the equipment on the route is now sufficient in order to construct the transcontinental gas pipeline Urengoy-Pomary-Uzhgorod at the previously outlined rates. Over 300 kilometers have already been passed this year.

Pipe length carrier "PV301A" on chassis of the "MAZ-7312" truck is designed to transport pipes from 530 to 1420 mm in diameter, 12m in length, and lengths up to 36 m. The pipe length carrier easily covers areas without roads along the route of pipeline construction. Its load capacity is up to 30 T. It can also be used for transporting equipment overweights.

Development of the natural resources of the northern regions of the country requires futher increase in output of these types of transport machines.

It is manufactured by the Leningorose plant of the Ministry of Construction of Oil and Gas Industry Enterprises.

Rotary trench excavator "TR-254" is designed for making trenches under the main pipelines with diameter of 1220, 1420, and 1620 mm.

The width of the trench is from 1.8 to 3.8 meters, depth up to 2.5 meters. The productivity in a first category ground is 1200m^3 per hour, weight is 41 T.

It has a special base, with the use of the elements from the tractor "K-701" and working part of the tractor "T-130." The power of the motor is 300 h.p. The excavator is manufactured by Moscow Experimental Mechanical Plant of the Ministry of Construction of Oil and Gas Industry Enterprises.

Swamp vehicle "Tyumen'" "BT361" is a two-link four-caterpillar tract transport vehicle. The swamp vehicle guarantees shipment of construction freight and production equipment for the main and field pipelines in swampy localities. It can be used as a base for creating machines and other mechanisms.

The load capacity is 36 T, the depth of the ford covered is 1.5 m, the maximum velocity is 15 km per hour. The swamp vehicle is made by the Kropotkin Experimental-Machine Construction Plant of the Ministry of Construction of Oil and Gas Industry Enterprises.

Pipeline layer "TG502" is used for laying pipes with diameter of 1220-1420 mm. It was created jointly with the Ministry of Construction, Road and Municipal Machine Building the Ministry of Oil and Gas Industry Enterprises. It is manufactured by the Sterlitamak plant of construction machines based on the tractor "T-330" in the Cheboksar plant of industrial tractors. The stability of the pipe layer (overturning load on the boom of 1.22m) is 102 T. In the American pipe layer from the firm "Caterpillar" model "594" this indicator is 10 T lower.

Many leading production lines are working ahead of the schedule. The success is based on reliable equipment, precise material-technical support, high organization of labor, and introduction of leading procedures and methods. The route workers are doing everything that depends on them in order to respond to the initiative of the collectives from the organizations of a number of ministries and departments for accelerated production of equipment for the gas pipelines with new labor achievements.

Precise and harmonious work of the machine builders, planners, designers, installers and builders is the best guarantee that despite the vain attempts of the Reagan Administration, the Urengoy-Pomary-Uzhgorod gas pipeline will begin to operate on time.

Department of Industrial Construction

Our special correspondent Andrey Zhdanov recently visited the route and prepared several reports under the general title "Tyumen Acceleration." The first report can be found on page two.

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PIPELINE CROSSING THE VOLGA DESCRIBED

Moscow PRAVDA in Russian 20 Aug 82 p 2

[Article by Yu. Knyazev, outside PRAVDA correspondent: "Crossing the Volga"]

[Text] It seems a long time since the first construction crew landed on the shores of the Volga, in that place were the trunkline Urengoy-Pomary-Uzhgorod should cross the mighty river. This group included workers and specialists of the comparatively rare occupation, builder-divers. This work has already developed in a broad front.

The experienced people of the Volga who came here on passenger or freight ships simply marvel. Quite recently there was a long island with steep shores overgrown with bushes close to the Chuvashskiy shores of the Volga. Now instead of one there are two islands. They are separated by a broad gulf. Next to them sandy beaches have appeared. It is exactly as if some giant, playing, cut the island in half and threw mountains and sand around.

"Our hydromechanizers have changed the surrounding landscape," explains the head of the Volga section of specialized administration for underwater-engineering operations of the trust "Vostokpodvodtruboprovodstroy" V. Rybal'chenko. Using suction dredges, they are preparing a test for the gas pipeline which will cross the Volga. The Siberian gas, having crossed the mighty water obstacles will travel futher to the west."

The Volga is one of the most complicated obstacles on the trunkline task. The length of its underwater part will be almost 2 kilometers. Skill, and daring, persistance and coordinated efforts of the machine operators, divers, crew of the section dredges and service ships, all the participants in crossing the river are required.

The schedule is short. Already this fall the collective of the section should lay into the trench the first length of gas pipeline. In addition, they are faced with fulfilling a number of other important assignments. Soon, for example, work will develop on the river Sure, not far from the Chuvashskiy city of Shumerlya. Pipe of the new trunkline will also be laid on the bottom of this twisty tributary of the Volga.

For the first time a pipeline 1 220 mm diameter will be laid across the Volga. In the region were the section is located,pipes prewelded into continuous lengths have arrived from the base of the administration of underwater-engineering operations located in Kazan. The length of each is 200 m. This will permit reduction in the duration of work on the shore, and improve the quality, for the lengths have already been tested.

The method of delivering the 200-meter length to the welding site is important. Their openings were hermetically closed by special plugs, as a result of which the pipes were made into unique pontoons. The tow ship without special concern delivered the important freight to the work site. The builders only have to remove the plug. The divers have highly productive pipeline-layers and other equipment.

"The divers bring submerged logs and stones from the bottom of the river," relates the assistant commander of the section dredge, the hereditary hydraulic operator N. Knyazev.

"This of course creates additional difficulties in the work. Moreover at this site the shiptraffic is very active, it is important that the builders do not disrupt it."

The bottom of the Volga in the region of the gas pipeline crossing has been covered many times by the divers, both now when construction operations are in progress, and earlier when they were outlining the route. The divers are true friends of the hydraulic machine operators. They have many concerns. They eliminate breaks in the cables, remove foreign objects from the trenches. At the same the divers are strict monitors of the work quality.

Now A. Vorogayev is going under water. The head of the floating diving platform located on the cutter, the experienced S. Shaydullin and the fairly young diver N. Gavrilov carefully watch his actions. Communications are maintained by telephone.

"I am going along the trench. The dimensions are normal according to plan. The installations, are also according to plan."

"Understood. Sasha, now go to lower edge of the trench. What is there?"

The work goes calmly, at a good rate.

"We are confident that we will lay the pipeline into the trench at the designated time," asserts S. Shaydullin. "We have skilful people and excellent equipment. The Siberian gaswill travel on the pipelines to West Europe at the outlined time."

The builders have set themselves up in a business-like way on the Volga. After moving in settlement. These dam-builders are setting up comfortable and light houses. Television antennas are already visible above the roofs of many of them. Straight roads scattered with sand or asphalted have been

built. The territory has been set aside for a sports complex. A store has been built. The last preparations are being made for opening a cafeteria-bar which they decided to call "Podvodnik" (diver).

A poplar is growing on the very shore of the Volga. Here a hotel will be raised. The name for it has already been thought up: "Topolek" (poplar).

A scarlet paper is visible from afar: "Urengoy-Pomary-Uzhgorod gas pipeline will be built on time and with excellent quality!"

On the Perm section of the main gas pipeline Urengoy-Pomary-Uzhgorodthe builders of the second specialized installation administration of the trust "Novosibirsktruboprovodstroy" are laying the route. Having been included in the competition on the principle "Worker's Relay Race," the collective of the administration has been abliged to complete laying of its section extending 75 kilometers by 25 December 1982.

In the picture: on the gas pipeline route.

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CATERPILLAR PIPE LAYER SUBSTITUTE DESCRIBED

Moscow EKONOMICHESKAYA GAZETA in Russian No 30, Jul 82 p 4

[Article by V. Gavrilov: "Heavy-duty Pipe Layer on the Urengoy-Uzhgorod Line"]

[Text] The system of major gas pipelines originating in the Urengoy oil fields is listed among the most important construction projects of the 11th Five-Year Plan. It includes the Urengoy-Pomary-Uzhgorod trunk line for export gas delivery.

The pipeline builders are equipped with new highly productive machinery. Pipe layers are of particular importance among the primary pieces of machinery.

Domestic industry produces a broad range of pipe layers with varied lifting capacities, starting from 6.3 tons; the decisive role is played by those with a 50 ton capacity. They are required for pipeline construction employing the 1,420 mm diameter pipes.

Until recently super long pipelines were built using primarily American Caterpillar equipment. The present U.S. Administration in its attempt to hinder the development of our economy, hinder the mutually profitable economic ties between the USSR and Western governments and disrupt construction of the Urengoy-Uzhgorod gas pipeline has blocked export of Caterpillar pipe layers. The vigorous economic potential of the Soviet state and the patriotism of the workers will successfully circumvent the need for U.S. technology, including the pipe layers for the pipelines.

Presently output of the domestic TG-502 pipe layers is progressing at a rapid pace. They are successfully replacing the American equipment.

Enterprises, scientific-research and planning and design organizations of the Ministry of Tractor and Agricultural Machine Building, Ministry of Construction, Road and Municipal Machine Building and Ministry for the Construction of Petroleum and Gas Industry Enterprises participated in the development and manufacture of the TG-502. Initial assembly line units were shipped to the lines 2 years ago. There are currently over 200 pipe layers of this model in operation there. What is the TG-502?

The primary tractor is a 330 horsepower unit from the Cheboksary Industrial Tractor Plant. The pipe layer is manufactured by the Sterlitamak Construction Machinery Plant in Bashkiriya. The domestic machine matches the Caterpillar in a number of the most important indices and surpasses it for the basic parameter of stability. Let us clarify this point: the index defines the maximum load at which it will tip over. For the TG-502 this is equal to 102 tons (with arm extended to 1.22 meters), while for the American firm's pipe layer it is 10 tons less.

The TG-502 lifting capacity is controlled by only three levers while the foreign analog requires eight levers. Moreover, the effort expended on the control levers of the Caterpillar is significantly greater. Operators have praised highly the assembly qualities of the lifting capacity equipment. The pipe layer is capable of executing operations with a high degree of precision. The Special Design Bureau Gazstroymashina designed the mounted equipment.

The new machine has recommended itself well during construction of the super long gas pipelines.

Replying to the discriminatory measures adopted by the U.S. Administration, employees of the Sterlitamak Construction Machinery Plant stated their readiness to meet in an exemplary fashion the responsible task of the Motherland. Secretary of the plant party organization A. Safiullina states:

"The enterprise produced 85 heavy duty pipe layers during the first half of the year. The assembly rate continues to grow. Meetings of workers have been held in all shops to discuss tasks facing the plant. These include the output of 165 units in the second half of the year, for a total of 250 for the year."

The Sterlitamak machine builders are fulfilling the honorable task with tremendous enthusiasm. The building, housing the manufacturing facility for the new machines, was built in a short period of time. Assembly-line production was achieved in the shortest possible time-frame. Competition is developing. Workers and specialists are apolying every effort to accelerate the growth of output of heavy-duty pipe layers and improve the quality.

Recently we learned that the Ministry of Construction, Road and Municipal Machine Building had enlisted the services of 18 additional enterprises to manufacture pipe layers. These include the Moscow Stroymash Production Association, the Nikopol' Crane Manufacturing Plant, the Slavyansk Stroymash Plant, the Chelyabinsk Strommash Plant, the Alapayev, Stroydormash Plant and others. They will assist us on the basis of production cooperation, in filling orders for casting, components and sets of parts.

We already know that next year we will have to manufacture 300 TG-502 pipe layers. The machine builders will meet the challenge.

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LACK OF PERSONAL RESPONSIBILITY BLAMED FOR CONSTRUCTION DELAY

Moscow SOVETSKAYA ROSSIYA in Russian 17 Jul 82 p 1

[Article by G. Gerasimov, installer of the trust "Spetsstroymontazh," Yaroslavl : "Have I Myself Done Everything?"]

[Text] The deputy minister of construction of oil and gas industry enterprises N. Khusnutdinov visited us. He collected the heads of the construction administrations. I believe that the conversation there was difficult. We were not praised. When it was undertaken to construct this pumping station, we promised to deliver it ahead of schedule. Now the planned schedule is arriving, but we are not near completion.

We got stuck with our general contractor SU-4 "Yaroslavneftegazstroy" at the supporting station. There we had to place four foundations under the pumps. Our general contracting colleagues dug a trench, but it filled up. The water was pumped out, dug again, and again it filled up.

Some people say that the clay will dry, install the ill-fated pumps, and goodbye. We will forget the unpleasantness at the construction site. But I believe that it is necessary to remember everything, both the good and the bad. It is necessary to take into consideration the omissions in order not to repeat the errors. It is necessary to understand why we, say made the oil pumping station in Melkovka of this same oil pipeline Surgut-Polotsk in 4 months, and this is already the third year at the oil pumping station "Yaroslavl'."

We readily habit justify oneself: they say that the subcontractors let us down in the first place. The block-boxes, for example, were planned to assemble so that they would arrive, be brought in, shipped, joined and presented to the customer. But the incoming items were assembled with such gross errors that everything had to be redone on the spot. Then in general they began to send everything back.

The head of the section V. Malas'yev and the head of our fourth construction administration from the trust "Spetsstroymontazh" A. Nikulin said many times: "The delay with the blanks is our misfortune, but not our fault." It seems that these calming words somehow helped to smooth the conscience of the higher leaders as well, ours and the customer's the Yaroslavl oil pipeline administration. Thus they said when the cafeteria did not have enough water, when the village of the city of builders was without heat in winter. They blamed the

[illegible], the designers, even the customer's inspectors. "Objective reasons" are found for every unavoidable [illegible] slip. What if we look at the shortcomings honestly, directly, without our normal departmental resentments? Then we have to take the blame on ourselves and share it with others.

[illegible] is the case with the [illegible] pumps. We installed them on the foundations, tied the butt-joints with pipelines, and checked whether everything was in order. Suddenly the foundation settled and tilted. Three weeks passed on repairing them. This cost R 28,000 which the customer naturally is not paying us. Who is guilty? Everyone says the error is in the plan, they did not take into consideration, they say, the ground in this place is floating. True they did not take it into consideration. But where then was the head of the SU-4 M. Pokrovskiy, and his chief engineer and production engineers? Is it true that they the specialists could not find out that the foundation would settle and it was impossible to halt the operations? Instead of themselves, without counting on others, for the good of the construction site, checking everything before the beginning of work and suggesting a review of the project, M. Pokrovskiy is now proving to the customer, the head of the Yaroslavl' regional oil pipeline administration A. Rukavishkin, that the designers allowed the error. Until now they have not been able to prove anything.

Recently they disputed a whole month, agreed with the customer on a plan for testing the production pipelines and reservoirs. The test could have been done in a week. But because of these squabblings we started in August and ended in November. And this is what happens at almost every step.

If you consider how many delays occur in the construction from the unfriendly work of all of those who must act as one, and how many losses result?

I believe that we will soon finish this station nevertheless. We will deliver it to the operators and will head off for new construction sites. What will we take with us? Our mistakes and shortcomings or our findings, inventions and good experience? It is important to extract from this construction site a lesson so that the next occurs without the previous slips, on a good organizational level. One of the reasons for these slips is our narrow specialization. Far from the base centers we do not have the right to be only installers of pipes. It is easier for us to learn related specialties than to send other narrow specialists here by helicopter. Then we will not have to deal for several months with these block-houses that I mentioned initially. And wouldn't it be better at these small compact construction sites as ours in general not to divide us into contractors and subcontractors? It is better to treat it as a comprehensive section. For it manages the facility from the first peg to completion, and operates on cost accounting. How many conflicts and misunderstandings could we avoid!

Who, for example, will take upon himself, the initiative, labor, and boldness of organizing this section? There is no special arrangement for this. And can one in the arrangements, orders and instructions stipulate/write absolutely everything, for every case of life. Only our conscience is capable of this. Do we often turn to it? Unfortunately no. At the construction site we have recently come into greater contact with lack of obligation, and lack of fulfillment. The reasons for it are sought in everything, only not in oneself, a method is sought

for justifying the natural slips, but not for correcting them. But you will not construct a gas pipeline on justifications. And you will not be satisfied with explanations of shortcomings. Let us first ask ourselves: have I done everything so that our trunkline persistently advances?

From the editorial staff.

The specific construction facility is a particular fact, and the conversation is an object lesson. However, the problem that is touched in it by the author is not confined to the pipeline section which very obviously revealed slips and miscalculations in construction. It goes beyond the framework of the sector, concerning the personal position of every person in relation to social labor.

Undoubtedly, the system of responsibility needs to be improved and monitoring needs to be intensified. But the author appeals to every reader. He is not without grounds in believing that there is no more reliable monitor than the strict, exacting conscience of the citizen. It needs to be educated in oneself, in those surrounding us so that everyone before asking from another, asks oneself: "Have I myself done everything?"

[illegible]
[illegible]: 1802/251

PIPELINES

WARNING ISSUED FOR DANGER OF PIPELINE EXPLOSION

Tbilisi ZARYA VOSTOKA in Russian 28 Jul 82 p 4

[Article by the Georgian Administration of Main Oil Pipelines: "Attention, Main Oil Pipeline!"]

[Text] The Georgian Administration of Main Oil Pipelines "Glavtransneft'" of the USSR Ministry of the Oil Industry is bringing to the attention of the ministries and departments, leaders of organizations, enterprises, institutions, kolkhozes and sovkhozes on whose territory the main oil pipelines of high pressure (up to 55 atmospheres), cables and communications lines travel that the transported oil is explosive.

Any mechanical damage to the oil pipeline can cause a rupture in the pipeline accompanied usually by an explosion and fire of great force. This can entail considerable material damage, pollution of the environment, water basin and human victims.

In order to prevent the possibility of damaging the pipelines and the communication line cables it is necessary to take into consideration the following:

Along the routes of the main pipelines according to the active construction standards (SNiP P-45-75) a safety zone is established, the minimum permissible distances from the access of the oil pipeline to the populated areas, industrial enterprises, individual buildings, structures and other facilities.

Note: the standards indicated in SNiP P-45-75 do not cover oil pipelines (oil pipeline networks) in cities and populated areas belonging to the system of the Georgian Administration of Main Oil Pipelines.

In the protection zone of main oil pipelines it is categorically forbidden:

a) to erect any structures;

b) to set up collective gardens;

c) to perform any construction, installation, drilling and explosive, quarry, mining and other types of operations;

d) without special permission of the organization operating the oil pipeline to perform excavation operations and lay-out of soil with the help of bulldozers and other excavation machines;

e) to set up pens for cattle, tethering posts, to store feed, set up silos and fertilizer, stack hay and straw, collect firewood and set up a shooting range;

f) set field machines or permit accumulation of people;

g) organize places of temporary rest, tent cities, areas for mass accumulation of people, etc.;

h) lay field roads closer than 10 m from the oil pipeline;

i) open the gates of the guards of the line of pressure fittings, the stations of cathode and drainage protection;

j) it is forbidden to plant perennial agricultural crops in the six-meter band on both sides of the oil pipeline.

It is categorically forbidden to cross the pipeline with heavy mechanisms and trucks without installing special crossings agreed upon with the owners of the oil pipeline.

In order to perform any type of operation in the protected zone of the main pipelines, the enterprises, organizations, kolkhozes and sovkhozes are obliged to agree upon and obtain from the organization operating the oil pipeline special permission and indication of the time and place, order of observation and monitoring of the performance of the indicated operations, precautionary measures which guarantee safety and preservation of the oil pipeline and structures on it.

The indicated measures for protection of the oil pipeline are fulfilled by the forces and resources of the enterprise, organization performing the work, according to the technical conditions issued by the organization operating the oil pipeline.

All types of work must be done only in the presence of the responsible representative of the organization operating the oil pipeline.

The ministries, departments, enterprises, organizations, kolkhozes, sovkhozes and individual citizens who violate the protected zone of the main pipelines will be responsible according to the active legislature.

Workers railroad workers, foremen, bulldozer operators, excavators, machine operators, leaders of the transport organizations, brigade foremen for harvesting agricultural crops!

Pay attention to the warning signs and markers that designate the routes of the oil pipeline.

If you find an oil leak from the oil pipeline immediately report this to the Georgian Administration for Main Oil Pipelines at the following addresses:

Operational service of the administration: 380059, Tbilisi, Digomskiy massiv, III quarter, 15 house; telephone 51-81-90; oil pumping station: Village Sartichala

of the Gardabanskiy Rayon: Commutator 36-57-72 or 36-57-81, additionally "Khashuri-7";

Oil pumping station Gachiani: Gardabanskiy Rayon, commutator: 36-57-72 or 36-57-81, additionally: "Gachiani";

Emergency service Mtskheta: Mtskheta, ulitsa Stalina, No 28; telephone: 26-34 (services the oil pipeline on the territories of the Gardabanskiy, Mtskhetskiy, Kaspskiy and Goriyskiy regions).

Emergency service Khashuri: Khashuri, ulitsa Tskhakaya No 101; telephone: 2-27 (services the oil pipeline on the territories of the Kerel'skiy, Khashurskiy and Sachkherskiy regions);

LPDS--line of the production dispatcher service of Kutaisi; Kutaisi, ulitsa Tsulukidze, corner 7 (services the oil pipeline on the territories of the Chiaturskiy, Zestafonskiy, Terzhol'skiy, Mayakovskiy, Vanskiy and Samtredskiy Rayons).

Emergency service Kviani: Village Kviani of the Lanchukhtskiy Rayon: telephone: 3-77 (services the oil pipeline on the territories of the Samtrelskiy, Chokhataurskiy, Abashskiy, Lanchkhutskiy, Makharadzevskiy, Kobuletskiy and Khelvachaurskiy Rayons).

The Georgian Administration of Main Oil Pipelines of the USSR Ministry of the Oil Industry will issue the specifications and agreement of the projects.

The address of the administration is: 380059, Tbilisi, prospekt Druzhby, III quarter, III house.

Telephones: 51-81-90, 51-55-74, 51-85-98.

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CSO: 1812/252

BRIEFS

AUTOMATIC WELDING--Testing was done at the platform of the construction administration No 3 of the trust "Kuybyshevtruboprovodstroy," where dozens of specialists gathered. The interest was understandable: this unit, created in the Kiev branch of the special design office "Gazstroymashina," was to not only completely exclude manual welding, but also guarantee considerable acceleration of work, guarantee its quality, and yields significant economy of electrodes and fuel. Generally the innovation promised great help for the subdivisions working on the gas pipeline route Urengoy-Uzhgorod. Now the long-awaited moment. The welder V. Troshin went to the control panel of the unit. The main designers of the new device V. Kotlyarevskiy and Yu. Minasevich took their place at the eyepiece of the optical control. The minutes extended for a long time. Finally Troshin stopped the semiautomatic machine. The experienced welders, who have more than a hundred kilometers of gas pipelines on their account, make a fault-finding examination of the seams and state: "clean work." This unit has been created for the first time. Its introduction into production is not a simple matter. But, taking into consideration the demands of the builders of the gas pipelines, the specialists decided to unite the plant tests with field tests. Of course, additional difficulties developed, but high professionalism and efficiency expert sharpness helped V. Troshin, brigade foreman V. Svetsov, machine operator M. Ivanov, electricians V. Rykov and Yu. Vasin, and their comrades to rapidly and with high quality cope with the domestic assignment. [Text] [Moscow SOVETSKAYA ROSSIYA in Russian 4 Aug 82 p 1] 9035

WELDING BASE--Ufa--The welding base created in the experimental mechanical shop "Dalvostoktruboprovodstroy" doubles the rate of welding pipelines. This equipment, passing successful tests, has been sent to the builders of the Urengoy-Pomary-Uzhgorod gas pipeline. The new unit guarantees semiautomatic welding of two butt-joints at once. A special device takes the pipes and lays the welded lengths. A cab has been provided for the welders which moves from butt-joint to butt-joint on rails. The entire base has a reliable covering which makes it possible to weld under any weather conditions. [Text] [Moscow IZVESTIYA in Russian 6 Aug 82 p 1] 9035

GAS PUMPING UNIT--Novgorod, 19 Aug (TASS)--Testing has been completed at the gas-compressor station here of the 25-megawatt gas pumping unit. It was manufactured in the Leningrad production association "Nevskiy zavod" imeni V. I. Lenin. The purpose of these units is to supply natural gas of West Siberia to the European sector of the USSR on the system of gas pipelines 1,420 mm in diameter under pressure of 75-100 atmospheres. [Text] [Moscow PRAVDA in Russian 20 Aug 82 p 2] 9035

PIPELINE HALTED --The pipeline branch extending from Siberia is heading into the republics of the Baltic and the Kaliningrad Oblast. Here it is called the "Aurora Borealis." The construction began intensively. In 1979 the 63-kilometer section from Panevezhis towards Riga was completed, tested, filled with gas and preserved. On the remaining 90-kilometer segment, the pipes were welded, prepared for laying, and since then have been lying like a dead weight! "I should say, 'hangs' on the neck of our administration," the head of the general contracting SMU-3 Lengazspetsstory N. Popov says more precisely. "In 1981 alone we paid fines for untimely finishing of facilities for credit of the state bank totaling R 600,000. In the first quarter of this year the losses were R 90,000." The collective of the section consisting of 120 people has been dislocated into a mobile city where there is a cafeteria and stores. The people are forced to live on the "wages" from different facilities of the department waiting for continuation of construction. What is holding up construction? First of all the customer is guilty. The Minsk direction of main gas pipelines under construction (director V. Shvab) from the production association "Zapadtransgaz" systematically interrupts the schedules for producing the estimated documents, the plans for organization of construction, the lists of commercial construction products of the start-up complex which are developed by the Leningrad institute Giprospetsgaz. Therefore the bank discovered financing for the 1980 plan at the end of November. The builders from the planned million rubles were able to assimilate only 400,000. Last year financing was discovered in December. This year it has not yet been found, since there are no approved start-up complexes and the list is not ready for commercial construction products. At the same time the plan of the administration has construction-installation work totaling R 3 million with start-up of 83 km of gas pipeline. The same questions await resolution by the customer for the 41-kilometer start-up section Vilnius-Elektrenay. [Article by V. Tumanov, in-house correspondent] [Text] [Moscow STROITEL'NAYA GAZETA in Russian 6 Jun 82 p 2] 9035

EARLY PIPELINE COMPLETION--The workers and specialists of the Ukrainian section of the main gas pipeline Urengoy-Uzhgorod adopted with great enthusiasm the patriotic initiative of the labor collectives of the country approved by the CPSU Central Committee and the USSR Council of Ministers for opening of the construction site of the century ahead of schedule. The counterplan was adopted by workers, engineers, technicians and specialists from the trusts "Ukrtruboprovodstroy" and "Ukrzapadneftestroy" of the republic main administration for oil and gas pipeline construction, as well as the Transcaucasus administration for pipeline construction from the all-union association "Soyuzintergazstroy." Thus, the collectives of "Ukrtruboprovodstroy" and "Ukrzapadneftestroy" have been obliged to complete their 394-kilometer route ahead of schedule, by the 66th Anniversary of the Great October, while the workers of the Transcaucasus administration have been obliged to complete their 126-kilometer line a month ahead of the planned schedule. In addition, the first 60-kilometer segment of the gas pipeline from the compressor station Bogorodchany to its crossing over the Svicha River will be finished by the 60th Anniversary of the Formation of the USSR, 10 days ahead of schedule. High commitments of the builders of the Ukrainian section have been published in the second issue of the appendix of PRAVDA UKRAINY for construction of the Urengoy-Uzhgorod gas pipeline. The initiators appealed to all related organizations, planning, supply and transport, to search for local reserves for timely fabrication of the planned-estimated documents, to supply on schedule and even ahead of schedule the equipment and materials, to strictly observe the schedules, to organize competition between the trusts, lines, brigades, and between the workers of the leading professions on the method of "worker's relay race." The honorable duty of the party, trade union and Komsomol organizations, leaders and specialists, all those who are participating in this intensive construction, is to maintain the initiative of the leading workers and at each section of the Urengoy-Uzhgorod trunkline broadly develop competition under the motto "each kilometer of the route ahead of schedule!" [Text] [Kiev PRAVDA UKRAINY in Russian 24 Jul 82 p 2] 9035

PIPELINE DOCUMENTS--The documents for arrangement of orders for equipment, fittings and construction parts for the compressor stations on the trunkline West Siberia-West Europe have been issued on a short schedule to the builders of the export gas pipeline by the collective of the Kiev institute "Soyuzgazproyekt." One of the points of the commitment adopted by the designers in response to the discriminatory measures of the U.S. administration has been fulfilled. "Soyuzgazproyekt" is the main institution in the system of the ministry of the gas industry for planning main gas pipelines constructed on the basis of foreign economic agreements of the USSR. Its collective participated in creating the gas pipeline "Soyuz" which is reliably operating on socialism, supplying the fraternal countries with valuable raw material and fuel. A considerable part of the system Urengoy-Uzhgorod gas pipelines has also been designed within the walls of the institute. "Our specialists made searches at the sites and issued working drawings for construction of the route over a thousand kilometers long," related the chief engineer of the institute I. I. Klyukach to the RATAU correspondent. "This is strictly three sections passing through the Urals, center of the country and West Ukraine. The project was fulfilled with regard for the use of import equipment which should have arrived on the contract 'gas-pipes'; we are now making corrections for the use of equipment of domestic production." The collective of the institute unanimously adopted socialist commitments for early output of the planned documents for the main construction

site. It was decided to fulfill all the work on schedules that are 1.5-2-fold shorter than the standard. In developing the projects for compressor stations, it was decided to broadly use the block-set units, achieve unification of all technical solutions, which will guarantee a high level of industrialization of work and rapid start-up of the facilities. In addition, it was planned to guarantee constant supervision of construction of the sections of the gas pipeline system, to intensify help to the contracting organizations in rapid solution of problems which could develop during construction. "The collective was very enthusiastic in starting the fulfillment of the adopted commitments," says the chief engineer. "This is indicated in particular by the production in a short time of the documents which guarantee timely arrangement of the orders for fabrication of the necessary equipment and construction parts for the compressor stations. There is no doubt that the manufacturers will not let us down, for construction of the export trunkline on time is a matter of honor of each Soviet person participating in this." The unfriendly act of the Reagan administration negatively affects primarily the West European partners of the United States, I. I. Klyukach stressed. "Many firms of the countries whose governments are obediently following the lead of the adventurist policy of the United States have already taken great losses. And it is not only the firms. Thousands of working people have been deprived of wages and positions. The deputy head of the technological section of the institute B. A. Shikharbeyev and deputy chief engineer S. N. Ivanitskiy saw this with their own eyes. They recently returned from Florence where they visited the firm "Nuovo Pin'one." The cast materials and finished parts for export equipment are accumulating in the plant rooms. The workers are without work. [Text] [Kiev PRAVDA UKRAINY in Russian 17 Jul 82 p 3] 9035

MULTIPLE LAYER PIPES--Tyumen Oblast--In the Tyumen north, the builders of the main gas pipelines have started to weld into a length an experimental section made of multiple-layer pipes. Their introduction will considerably increase the flow of blue fuel from the Siberian depths to the industrial centers of the country. This summer in the middle course of the Ob was surprisingly dry and hot. But the welders of the brigade of Communist A. Bragin from the SMU-25 of the trust "Priob'truboprovodstroy" grumble at the weather. It is easier to work in winter on the route. In winter the swamp blood-sucking insects do not hang over you in clouds. There is no safety from them. Quite recently they did not work in these areas in summer as a rule. Surrounded by a swamp, man nor heavy equipment could travel. Now they are working. Moreover, they are fulfilling a new assignment. "This collective is one of the best," relates the deputy head of SMU-25 Yu. Konoplev with whom we arrived at the construction of the experimental section. "Everyone in the brigade recognizes the importance of the experiment." What is its essence? "Today we are building gas pipelines from pipes 1420 mm in diameter designed for pressure of 75 atmospheres," the head of Glavsibtruboprovodstroy N. Kurbatov continues the conversation. "If we switch to pressure in the main gas pipelines of 100-120 atmospheres, instead of the three traditional 'lines' of the gas pipeline with pressure of 75 atmospheres, one can build two pipes of the same diameter but designed for pressure of 100 atmospheres, and further switch to construction of gas pipelines with working pressure of 120 atmospheres. Instead of two gas pipelines this will permit construction of one. If we take into consideration that the laying of each gas

pipeline requires capital outlays of up to R 3 billion, and over 2.5 million T of pipes are used, then it is clear that we obtain an enormous saving when building main gas pipelines of the new class." Good pipes are coming to the route. Our metallurgists have learned to make good multiple-layer pipes. [Article by V. Lisin, PRAVDA correspondent] [Text] [Moscow PRAVDA in Russian 22 Aug 82 p 1] 9035

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